STATE OF MAINE
PUBLIC UTILITIES COMMISSION

Docket No. 99-851

April 24, 2001

MAINE PUBLIC UTILITIES COMMISSION
Investigation into Verizon-Maine's Alternative Form of Regulation

EXAMINER'S REPORT

NOTE: This Examiner's Report is written in the form of a draft order, but it constitutes the recommendation of the Hearing Examiner. Parties have until **May 1, 2001**, to provide written exceptions. The Commission expects to deliberate this Examiner's Report and a related draft order that contains proposals for a future AFOR at its Agenda Session on **May 7, 2001.**

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I. SUMMARY AND INTRODUCTION

In this Order we extend the Alternative Form of Regulation (AFOR) that is presently in place for Verizon Maine (Verizon), but we modify the terms of the plan by allowing Verizon additional pricing flexibility for most services. We continue, however, to protect residential and small business ratepayers from increases to their basic service rates and to charges for two other services that currently do not exhibit workable competition. In addition, we will propose in a new rulemaking to implement a Universal Service Fund (USF) that will provide Verizon with sufficient funds to offset the estimated loss of access revenues that will occur as a result of the operation of 35-A M.R.S.A. §7101-B. We will not compensate Verizon for any of the lost retail toll revenues that may occur in the future because we expect that Verizon should be able to absorb such losses through continuing productivity gains and revenue increases from other services.

The revised AFOR will have a term of five years, during which we anticipate that competition will become the major factor in shaping the telecommunication industry and the way that Verizon conducts business in Maine. While we recognize that ubiquitous competition for all types of customers and services may be slow to develop fully in a state such as Maine with many high-cost exchanges we will take all reasonable steps to ensure that economic competition develops as quickly as is reasonably possible. During the revised AFOR, we will continue on the path to a fully competitive market for all services in all parts of state, recognizing that we have the ability and authority only to remove barriers to competition. We cannot force it to materialize and take hold when it is not economically justified.

We also will continue the Service Quality Index (SQI) mechanism that we adopted for the present AFOR, but we will modify several of the indices used in the calculation. To better reflect those aspects of Verizon's provision of service that are of most concern to customers, we will eliminate four of the current measures, combine two current measures into one, and add five new indices. We also will revise all the baseline measurements, except one, to reflect the most recent data available. Finally, we retain the current method of calculating the penalty for each measure and the amount of potential penalty per index that Verizon will incur from failure to meet the standards. We also retain the maximum penalty that can be imposed on Verizon for any annual reporting period.

As we proposed in the FNOI, we will not adopt an overall price cap for core services. During the term of the revised AFOR, we will not allow Verizon to increase its rates for basic exchange service (except for multi-line business customers who have 10 or more lines and reasonable competitive alternatives), or for operator services or directory assistance, unless Verizon shows that there is an effectively competitive market for any of these services. Rates for intrastate access will continue to be set in accordance with the requirements of 35-A M.R.S.A. § 7101-B, and wholesale rates will remain subject to the provisions of the TelAct. For all other services, we find either that there is a sufficiently competitive market, or that they are discretionary in nature. For those services Verizon will have full pricing flexibility. We will discuss these decision in greater detail in Part III.

The USF that we will propose in a rulemaking shortly after the issuance of this Order will provide Verizon with additional revenue that is equal to the estimated amount that the Company will lose when it reduces its in-state access rates to the federal level on May 30, 2001, as required by the access parity statute. We find this to be a reasonable and equitable response to a statutorily-mandated rate design modification. We measure the amount of access revenue loss that will be compensated with USF funding based on the May 2000 access traffic volumes, as presented by the Company's witness, Mr. Shepherd. That amount is $14.5 million, and we make no adjustment to account for the effects of increased access usage that may result from the reduced rates, because there is no acceptable estimate of the timing or magnitude of any stimulation effect. Also, we have not provided the Company with additional revenue to compensate it for any toll loss that may to occur after access rates are reduced, nor will we provide any compensating revenue for the relatively small access reductions that are expected to occur in May, 2003, . The annual amount of USF support for Verizon will remain in place for the term of the revised AFOR, unless the Commission modifies it after appropriate notice and opportunity for participation by interested parties.

II. BACKGROUND

The Commission adopted the present AFOR in 1995. (Throughout this Order we refer to the AFOR in effect from December 1, 1995 to the date of this Order as the "present" AFOR). During its term, Verizon's core rates have been reduced by an average of 12.5%. While basic rates were increased as part of a stipulation to allow the Company to offset part of the reductions to access rates mandated by Section 7101-B, we believe a similar result would have occurred under rate of return regulation. We therefore find that ratepayers today are the same or better off than they would have been without the implementation of the AFOR, as is required by 35-A M.R.S.A. § 9103(1). While the main beneficiaries of lower rates are toll users, that outcome is not surprising, not only because of the access charge reductions but because competition is greater in the toll market than in the local market. .

Since we implemented the AFOR, two major legislative events, one at the national and one at the State level, have significantly impacted the telecommunications industry. At the federal level, the Telecommunications Act of 1996 (TelAct) provided the basis and terms under which local exchange service was fully opened to competition. The TelAct set forth the principles under which competitors could enter the local exchange market by use of their own facilities interconnected with those of the incumbent local exchange carrier (ILEC), or by using all or portions of the ILECs local network facilities (by purchasing Unbundled Network Elements, or UNEs), or by reselling the ILEC's local service in its entirety. The TelAct established the obligations of ILECs to make their services and facilities available to competitors, and it spelled out the procedures that must be followed in reaching agreements for interconnection, use of UNEs or resale. The TelAct continued the prohibition contained within the MFJ whereby the former Bell operating company ILECs (RBOCs) could not originate interLATA traffic within their local service territories until they proved that their local markets were opened completely to competition. The TelAct allows the RBOCs to carry such traffic once they have proved that their local markets are open to competition.

As shown by the OPA in this proceeding, and generally agreed to by the Company, local exchange competition has developed rather slowly so far in Maine. It has occurred primarily for multi-line business customers located along the I-95 corridor. That group appears to be the only customers who have gained the benefits of competitive alternatives for basic service. Given the economics of the available technology, that result is expected. However, the Commission may soon institute a proceeding that will explore the possibilities for providing economic incentives for competitors to serve all, or at least most, areas in the State.

The Maine legislature enacted 35-A M.R.S.A. § 7101-B in 1997. Section 7101-B requires "access parity", i.e., a Maine LEC's intrastate access charges must be at or below its interstate access charges. Although the access parity statute was enacted in 1997, it did not require LECs to make any access charge reductions until May 30, 1999, about three and a half years after the AFOR began.

The anticipated effects of the access parity statute led to the Commission's acceptance of a stipulation that increased basic exchange rates in a 3-step process (which involved a waiver of the original AFOR pricing rules governing basic exchange service rates), but decreased intrastate access rates to their interstate level on May 30, 1999, as required by the statute. The statute requires that intrastate access rates be readjusted every two years to levels that are equal to or less than the federal levels. The second adjustment is imminent, on May 30, 2001. While the statute directs the Commission to take action regarding access rates, the intent of the statute is to remove one of the major impediments to lower intrastate toll rates. Under subsection 3 of the statute the Commission has the authority to require that the access rate reductions be passed along to consumers if it finds that effective competition does not exist in the in-state toll market. To date, the Commission has not found it necessary to use its authority to lower toll rates, as the available evidence suggests that competition has resulted in reductions to in-state toll rates.

The Commission must consider revisions to the AFOR with these changes in the telecommunications environment in mind. The Commission remains committed to relying on competitive forces to guide the telecommunications marketplace in Maine, but it must maintain regulatory control over those services whose markets have not reached the stage of full and open competition. The statutory authority under which the Commission may implement an AFOR is contained in 35-A M.R.S.A. §§ 9101 – 05. Section 9103 sets forth nine objectives that the Commission must ensure are met in any AFOR that it adopts.

In our AFOR Order in Docket 94-123, we discussed each of the nine objectives and found that the AFOR met, or was very likely to meet, the statutory standards. In the Further Notice of Investigation (FNOI), issued in this Docket on June 26, 2000, we described how the AFOR proposed revisions would continue to satisfy the provisions of the statute. Based on the findings contained in those documents, and the fact that the revised AFOR adopted herein contains many of the same provisions, we do not believe it is necessary to discuss how the revised AFOR meets each of the statutory objectives. Our findings and reasoning from the original AFOR Order and the FNOI continue to apply and support our finding that the AFOR complies with all statutory requirements.

We will describe our analysis and findings concerning some of the objectives, however. The first objective requires first, that the term of the AFOR not exceed ten years nor be less than five years, and second, that residential and small business ratepayers not be required to pay more for local service as a result of the implementation of the AFOR than they would under traditional rate base or rate of return regulation. In our original AFOR Order, we decided that toll rates should also be priced as low or lower under an AFOR than they would under traditional regulatory ratemaking principles.

During the initial term of the AFOR, much of the amount of the rate reduction required under the operation of the price cap mechanism (the "price regulatory index" or PRI) went to the toll market, which is the most competitive telecommunications market in Maine. During the course of the AFOR, we also approved a stipulation that contained, as one part of it, a fairly significant increase to basic exchange rates, notwithstanding a pricing rule under the AFOR that prohibited increases to basic local rates unless the PRI was positive. (It never was positive). The increase to basic rates, therefore, was not the result of the operation of the AFOR. Instead, it was the product of the statutory mandate that intrastate access rates be set equal to those established by the FCC for interstate access. Implementing the statutory mandate resulted in a very significant decrease in intrastate access revenues for Verizon, and the Commission found it reasonable to allow the Company to offset a portion of the estimated access revenue loss with an increase to basic exchange rates. The Commission found that it was reasonable and necessary to allow the Company to recover some of the access loss through a rate increase to the only service that could provide the needed amount of revenue, i.e., basic exchange service. Universal Service Funding (USF) was not considered as an alternative means of funding because the statute authorizing such funding (35-A M.R.S.A. §7104) did not become effective until several months after the

Commission approved the Stipulation. We believe our decision was a proper balancing of the numerous objectives contained in the statutes.

We are again faced with the need to adjust intrastate access rates downward on May 30, 2001, in order to comply with the provisions of Section 7101-B. The amount of the decrease will not be quite as large as the one associated with the 1999 adjustment, but it still will result in a significant reduction in the Company's access revenues. We decide that it is reasonable to provide an offset to the access revenue loss through a State Universal Service Fund (USF), and we accept the Company's estimate of the size of the revenue reduction, $14.5 million. Because 35-A M.R.S.A. § 7303 requires us to keep traditional flat-rate local service at as low a cost (i.e., rate) as possible, and because we find that Verizon's basic exchange ratepayers should not be solely responsible for the Company's lost access revenue, we have proposed implementing a USF that will be broadly-based across all telecommunications providers, including mobile telecommunications providers and paging companies, as permitted under the USF statute. Although Verizon's customers will pay a proportional share of the USF amount, that share will be less than the amount they would be responsible for had we imposed a local rate increase for the full amount of the access loss. While the issue of basic local rates is not directly related to the form of regulation that is in place (because it is primarily a rate design issue), our decision here not to recover access revenue losses by increasing basic rates, but rather to institute a USF, is consistent with the statutory requirement (35-A M.R.S.A. §7303) to keep basic rates as low as possible. We therefore continue to find that basic rates meet all requirements of the Maine statutes.

Objective number five of Section 9103 also addresses the issue of rates for local service. It requires that customers pay only "reasonable charges for local telephone services." The sixth objective may indirectly affect local rates in that it states that an AFOR must ensure that the telephone company has "a reasonable opportunity to earn a fair return on the investment necessary to provide local telephone services." Thus, the Commission is obligated to consider the interests of both ratepayers and the Company when it establishes local rates under an AFOR, and we have continued that balancing of interests in the revised plan.

As we stated in our Notice of Rulemaking (NOR) (Docket Number 2001-230), we intend for the High Cost USF for rural or independent telephone companies (ITCs) to accommodate several policy objectives that may be read to promote competing goals. The additional USF that we propose in a separate rulemaking for Verizon will have the same purpose. Instituting a USF will allow us to reduce access charges, maintain basic local rates at as low a level as reasonably possible, and permit the Company the opportunity, as required by 35-A M.R.S.A. § 9103(6), to continue to earn a reasonable return on its "investment necessary to provide local telephone services."

We also find that the revised AFOR is equitable to both customers of Verizon and the Company itself. Customers are protected from unwarranted increases to their basic rates and should see the benefits of reduced toll rates, while the Company is provided the opportunity to price nearly all of its other services at levels that will optimize its revenue. Further, to the extent that the Company can become more efficient while maintaining its service quality at acceptable levels, it will reap and keep the rewards for itself. Conversely, if the Company is not efficient or if it loses customers to competitors, it will not (except under exceedingly extraordinary circumstances) be permitted to ask the Commission to assist it in reviving its earnings.

In this docket the Company has made several assertions about its inability to increase its revenues and, consequently, its earnings, given the general condition of the economy in Maine and the changing telecommunications environment. We reject the Company's assertions, and find it ironic that the Company expended as much energy as it did in its testimony and briefs discussing its earnings situation, given that the Company vigorously opposed the Public Advocate's request to conduct an earnings investigation for Verizon, and the Commission decided to do just as the Company recommended. In rejecting the Public Advocate's request, we made clear that we did not consider revenue requirement or earnings to be relevant to the issues involved in continuing and revising the AFOR. It is difficult to understand why the Company in the late stages of this case would attempt to support a request for a basic rate increase with claims about its current and future earnings.

We reiterate that earnings are irrelevant, but we believe we should respond and add some perspective to Verizon's claims. First, we observe that over the four years ending in December, 1999 (the last complete calendar year for which the Company has provided results), the Company's intrastate earnings grew at an average annual rate of 21.4%, even though its revenue growth averaged only 5.0%. Apparently, the Company has been able to generate enough efficiencies in its operations to overcome the AFOR-induced rate reductions. The Company has alleged that the year 2000 will show an actual decline in its earnings, but the Company at this time has not filed that information with the Commission. While its 12-months earnings report for September 2000 shows a decline in earnings from the previous year-end report, we are well aware the year-end accounting adjustments and other factors often mean that those interim numbers are not wholly reliable. Even if the year 2000 results produce a somewhat reduced level of earnings, the Company cannot claim, over the initial term of the AFOR, that its financial results have been unacceptable, especially when compared to what might have occurred under rate of return regulation. The AFOR is, in effect, a two-way agreement between the Company and the Commission, and the Company must abide by the terms of the deal, absent extremely extraordinary circumstances. The Company appears to favor incentive regulation when its business is prosperous, but apparently suggests that its rate of return becomes relevant when its earnings decline. We firmly reject that policy.

Finally, we note that while the Company states that it has invested over $500 million in Maine during the initial AFOR term, its intrastate rate base actually declined slightly from the end of 1995 to the end of 1999. Apparently, the Company is either retiring more plant than it is adding or is depreciating the plant faster than it is replacing it. We also have no record evidence to indicate the types of investments that Verizon is making. It is possible that much of the investment is being made to allow the Company to provide new, advanced, non-core services for which it had complete pricing and earning flexibility under the current AFOR. In short, there is no evidence to support the assertion that the Company has been disadvantaged financially by the present AFOR, nor to support the claim that the Company won't have a continued opportunity to perform well financially in the future, provided it can meet the competitive threats of the marketplace.

The Company also claims that its growth rate in access lines has turned negative, as cable modems replace second lines for Internet usage and competitive LECs pursue the Company's most lucrative business customers. The Company appears to be suggesting that it has no growth opportunities left in the telecommunications area. We find this suggestion somewhat mystifying in the face of Company's decision to invest over $500 million in Maine over the past five years. While the Company's traditional sources of revenue may decline in the future, we find it very difficult to believe that there are not numerous opportunities for increased revenues in the telecommunications industry, especially for a former monopolist that already has in place a ubiquitous and vibrant infrastructure.

As a condition of its approval of the Bell Atlantic – GTE merger, the FCC required Verizon to offer its retail advanced services through a separate affiliate to prevent potential abuses by Verizon in the provision of those network elements that are necessary to provide advanced services. In our order approving the transfer of certain assets to Verizon Advanced Data Inc. (VADI), we conditioned approval on the understanding that we would have the authority to take into account for ratemaking purposes the results of Verizon and VADI on a combined basis (or at least the rates that Verizon charged VADI for use of its services, equipment and facilities) should a revenue requirements examination ever be conducted of Verizon.[1]

While the telecommunications market may be shifting, we see no evidence that it is a declining market, and Verizon has every opportunity to participate and prosper in

[1] Under the present AFOR, most of the services provided by the assets transferred to VADI were non-core, and were not subject to any pricing rules, including the overall price cap of the Price Regulatory Index (PRI).

that market with few constraints. Based on recent events in the advanced services market, VADI may possess certain advantages over some other competitors, given the number of companies that have left the business recently.

Finally, we discuss two other objectives contained in Section 9103 that are related in purpose: number 4 ("Safeguards") and number 7 ("Encourage telecommunications services"). The fourth objective requires that the AFOR protect local service subscribers from the risks associated with the "development, deployment and offering of telecommunications and related services offered by the telephone utility, other than local service"; it also requires that the utility continue to offer a "flat-rate, voice-only local service option". Objective number 7 requires the AFOR to "encourage the development, deployment and offering of new telecommunications and related services in the State."

The present AFOR accomplished these objectives by in part by permitting limited or no increases to local service rates. The revised AFOR accomplishes these objectives in part by providing USF support only in the amount necessary to accomplish the statutory requirement of mirroring interstate access charges. Both the present and revised AFORs allow the Company a reasonable opportunity to earn a fair return on its local network investment. The present AFOR allowed the Company complete pricing freedom on all new services, by making them non-core services, and excluded them from the rates that were subject to the PRI, this insulating local ratepayers from the risks of those services. The revised AFOR expands the pricing flexibility afforded Verizon, in that the Company is allowed to adjust the prices in any direction for almost all its services without price cap restrictions. Verizon has the ability to price its discretionary services at the level that will maximize its revenues; it can compete with alternative service providers; and it can offer any advanced services (through its affiliate, VADI) that it is capable of offering at competitive prices (subject to FCC merger conditions.) Verizon assumes the risks and earns the rewards of its actions according to its ability to offer services and products that customers want in a timely manner and at market-based rates.

The Executive Branch (EB) agencies of the State of Maine have proposed that we adopt specific infrastructure investment requirements for Verizon in Maine in order to ensure that telecommunications technology in Maine is similar to that deployed by Verizon in more urban centers. We discuss this proposal in Part VIII.

We turn now to a more detailed discussion of some of the issues described above.

III. AFOR STRUCTURE; PRICING RULES

As we proposed in the FNOI, we will not adopt an overall price cap (in the form of a price regulatory index (PRI) or otherwise) for any group of services. Three retail services will be subject to direct price regulation by the Commission; the Company will not be allowed to raise prices for those services except as described below. Access and wholesale services will be subject to regulation pursuant to statutes. The Company will have pricing flexibility for all other services.

While we do not adopt a PRI that contains a formal recognition of productivity gains, we find that productivity for Verizon will continue to increase. We rely on those productivity gains (along with increases to revenues for other services) to offset expected decreases to retail toll revenues. We explain our reasons for this decision in Part V.

During the term of the revised AFOR, we will not allow Verizon to increase its rates for basic exchange service (except for multi-line business customers who have 10 or more lines and reasonable competitive alternatives) unless Verizon at some future time can show that there is effective competition for local exchange service. Based on the testimony of Public Advocate witnesses Norton and Sweet, we cannot find at this time that there is any effective local exchange competition for local exchange customers other than business customers with a large number of lines.

We also will not allow Verizon to increase its prices for operator or directory assistance (DA) services, unless Verizon can show a cost basis for such a change or that either of these services has become competitive. We describe our reasons for this decision in Part VI.

During the revised AFOR, the Company may present evidence showing that a competitive market exists for residential or small business local exchange service, or for operator or directory assistance services. If we find that a competitive market does exist for any of those services, we will allow Verizon increased pricing flexibility for the service we have found to be competitive.

Rates for all wholesale services will continue to be set in accordance with statutory provisions. Rates for intrastate access are governed by Section 7101-B, and wholesale rates for unbundled network elements, interconnection and local resale are subject to the provisions of the TelAct.

We will allow Verizon pricing flexibility for local exchange rates for business customers with 10 or more access lines, or their equivalent, if those customers are served by a wire center in which at least one facilities-based CLEC has facilities in place to provide service to customers with ten or more lines. We find that there is sufficient competition for that category of business customers based on the testimony of Public Advocate witnesses Norton and Sweet.

For all other retail services we find that there is either effective competition or that the service is discretionary. We will permit Verizon pricing flexibility for those services. We find that the retail toll market has been effectively competitive for several years. A discretionary service is one that is not absolutely necessary for most customers and is typically characterized by a high elasticity of demand, such that many customers will not purchase (or continue to purchase) the service if the supplier raises the price too much. The nature of demand for the service contains a built-in check on pricing. In the present AFOR, we granted Verizon pricing flexibility (subject, however to the overall price cap of the PRI) for a broad category of services we determined were "core discretionary." That category included nearly all of Verizon's services, other than the three whose prices cannot be increased under the revised AFOR, plus retail toll.

Verizon may change its rates for those services at any time, provided it files tariff changes with the Commission and provides notice to customers that is required by statute or Commission rules. As under the present AFOR, Verizon may not price any rate below the long-run incremental cost (LRIC) of providing the service, but the Commission will not investigate any rate decreases unless a complaint is filed that alleges a violation of this rule.

IV. ACCESS REVENUE REDUCTION; UNIVERSAL SERVICE FUNDING

Pursuant to the requirements of 35 M.R.S.A. §7101-B and the rules of this Commission, Verizon must reduce and restructure its intrastate access charges so that they are at or below the level of interstate access charge rates. The OPA estimates that the revenue impact of that reduction will be $8.4 million (see MHK – 5, page 2 0f 2). Verizon estimates that the reduction in access rates will reduce its access revenues by$14.4 million (see Shepherd rebuttal at 14).

The OPA's estimate of access revenue reduction assumed growth in access use demand was based on past growth trends. Verizon's estimate did not appear to take into account any growth in access minutes.

We find that the OPA's estimate of the loss of access revenues is understated for several reasons. In general, stimulation studies are usually highly speculative, and this Commission has often been reluctant to use them. OPA witness Kahn's growth estimates assume a continued growth in access minutes that was caused in part by the introduction of Intra-LATA presubscription (ILP), resulting in migration of some Verizon retail toll customers to other interexchange carriers (IXCs) and an increase in access minutes paid by those carriers. ILP, however, was a one-time event. Dr. Kahn's estimates also do not recognize any possibility that some of the growth in competitive IXC traffic (and, therefore, access minutes) that have occurred in the past may not continue because Verizon's own toll rates have become more competitive. Finally, Dr. Kahn ignored the possibility that as facility-based CLECs gain customers, some access service that Verizon presently provides will be diverted to those CLECs. (Verizon may, however, receive revenue from providing unbundled network elements (UNEs) to those CLECs.)

We also find that Verizon's estimate of $14.5 million access revenue loss is slightly overstated. While the growth in access minutes is not likely to be as great as Dr. Kahn's estimate, it will not be zero. Some of the growth in interexchange carrier minutes that has occurred in the past is likely to increase in the future.

We must initially consider whether we should allow Verizon to recover the $14.5 million access revenue loss through additional funding and, if so, the method of that recovery.

We decide that we should permit that recovery in part because the access charge reduction is required by law, and part because of our decision, in Part V, that we will not allow direct recovery, through immediate rate increases for other services, for toll revenue losses. In Part V, we find that Verizon should be able to meet the need to lower toll to meet competitive pressures through increases in productivity and increased revenues for other services. It is not reasonable to expect that Verizon should also be able to absorb the access revenue reduction of up to $14.5 million.

In the revised AFOR we do not continue the PRI that is part of the current AFOR and its formal method of adjusting rates to compensate for significant "exogenous" changes in costs or revenues. Nevertheless, Verizon has presented reasonable arguments that the access charge reduction mandated by statute is in the nature of an "exogenous" change to revenues as defined by the first AFOR Order, modified by the Stipulation approved in 1998 (also in Docket No. 94-123) that addressed the first round of access charge reductions required by 35-A M.R.S.A. § 7101-B. The access revenue loss that is directly attributable to the operation of the statute is beyond Verizon's control and is unique to the telephone industry; it has a "substantial and disproportionate" effect on its revenues. Because we will not allow Verizon to recover retail toll revenue losses through increases to other rates, we find it reasonable to allow it to recover the entire estimated access revenue loss or $14.5 million, even though, as suggested above, there may be some stimulation to access minutes that offsets part of the access rate reduction.

Verizon's witness Dinan proposed two methods for recovery of the access revenue loss:

(1) Increases in basic service rates;

(2) Implementation by Verizon of a Carrier Market Share Charge (CMSC).

We must consider several statutes enacted at different times for guidance concerning the relationship between local rates and access rates. Despite the possible appearance of conflicting goals among these statutes, a tribunal that applies them must attempt to reconcile and harmonize any possible conflicts.

The access parity statute, 35-A M.R.S.A. § 7101-B, requires access rates that are equal to or less than federal access charge. 35-A M.R.S.A. §7303, which was enacted by citizen referendum, continues to require basic rates that "are as low as possible." In the rate design proceeding in Docket No. 92-130 (and again in the First AFOR order), we interpreted section 7303 (which expressly applies to an AFOR pursuant to section 9302) as permitting an increase to local basic service rates only under limited circumstances,[2] including, if shown, that basic service rates were priced below marginal cost.

In this case, Verizon attempted to compare its basic service rates to its claimed costs for its Unbundled Network Element Platform (UNE-P), apparently suggesting that the rate for basic service was below cost. Verizon has compared the price of an apple to the cost of producing a whole basket of fruit. The UNE-P includes loops, switching and several other UNEs that together provide *all* of the services (and all of the rates and revenues) that are provided by the local network. These include not only local basic service, but such services as intrastate access, interstate access, CLASS services, vertical services, and some broadband services. The cost of providing the UNE-P is the same as the cost in aggregate of producing all of the services provided by the UNE-P, not just the cost of basic service.

The access parity statute (Section 7101-B) was enacted several years after section 7303 (the section requiring basic rates "as low as possible"). It requires intrastate access charges to be the same or lower than interstate charges "notwithstanding any other provision of law." We do not believe that the

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[2] In the AFOR Order in Docket No. 94-123 (May 15, 1995), we stated:

> In our *Docket No. 92-130 Order*, we interpreted section 7303, ruling that it was possible to raise basic rates upon various circumstances each of which in effect amounts to a finding that an existing rate design is unreasonable and detrimental to overall rate levels or to the public interest….
>
> Section 7303 is primarily a rate design statute. In effect, the voters of this State decided that increases to basic rates should be discouraged and that the rate design (the balance between various rates such as basic and toll rates)

legislature intended that phrase to negate the rate design directive of section 7303 any more than it intended to enact a statute that was confiscatory (confiscation being prohibited by law).[3] It must be recognized, however, that at some point (when it is no longer "possible" to maintain a particular level of basic rates *and* also comply with the access parity statute), the lowest "possible" local basic service rates might have to higher than some existing level. Access reductions required by the access parity statute place inevitable pressure on revenue sources other than retail toll rates (e.g., basic rate, rates for other services and, as discussed below, universal service funding) because of competitive market pressures that will tend to lower prices in the retail toll market. In addition, a provision of the access parity statute itself requires the Commission to require retail toll rate reductions if it finds that a competitive toll market does not exist.[4]

> in place at the time the statute was enacted was reasonable and should not be changed without substantial cause.

[3] Nevertheless, Section 7101-B requires a setting of access charges without reference to the costs of providing access service.

[4] Subsection 3 of section 7101-B states:

> If the commission finds that effective competition in the intrastate interexchange market does not exist, the commission shall require all persons providing intrastate interexchange service to reduce their intrastate long-distance rates to reflect net reductions in intrastate access rates ordered by the commission pursuant to subsection 2.

Nevertheless, the rate design directive of section 7303 ("lowest possible local rates") remains in effect. At the very least, it requires us to consider alternatives other than increases to local rates. One possible source is rates for discretionary services such as enhanced services, but, as discussed below, we expect possible additional revenues from those services to offset decreases to retail toll rates that Verizon will almost certainly have to make. We find that a universal service fund (USF) is the best available alternative to increasing basic service rates both because section 7303 in effect states that increases to basic rates should be used only as a last resort, and because we believe that universal service funding spreads the burden caused by the reduction in access charges more broadly among all telecommunications providers and their customers, all of whom benefit from the existence of Verizon's network and many of whom may benefit from the access reductions. Verizon argues (in support of its proposed Carrier Market Share Charge), and we agree (particularly in light of the "lowest possible basic rate" mandate of section 7303), that "all users of the Company's local exchange plant …should contribute towards NTS cost recovery."[5]

We also find that a USF is more appropriate than an increase to basic rates because of the history of the interstate access charges that govern the level of intrastate charges pursuant to section 7101-B. Over a period of time, the FCC has reduced interstate per-minute access rates substantially, but some of the costs formerly

[5] A carrier that must pay a USF contribution might propose to pass on its costs to its end-user customers. Accordingly, some of the incidence of USF contributions might fall on basic rates.

recovered by per-minute access rates are now recovered by universal service funding.[6] The Maine legislature may not have anticipated this interstate shift from access to USF when it enacted the access parity statute in 1997, but it specifically authorized state universal service funding in 1998. 35-A M.R.S.A. § 7104. That authorization, in conjunction with the basic service rate mandate of section 7303, leads us to the conclusion that a USF is the preferred way to address the revenue losses that will result from the reductions in access rates.[7]

We have recently initiated a rulemaking for rural LECs (the independent telephone companies) (hereinafter, the "Rural USF rulemaking."). In that rulemaking we proposed that all carriers providing intrastate service in Maine must contribute to a universal service fund, based on each carrier's total intrastate retail revenues. The statute authorizing a universal service fund, 35-A M.R.S.A. § 7104, allows the Commission to require contributions from a broad range of carriers: all LECs, all IXCs, and all mobile and paging carriers. We proposed to apply the requirement to the full range of carriers listed in the statute, on the ground that all of these carriers use the

[6] Some of those costs have also been shifted to the interstate End-User Common Line (EUCL) charge. From the perspective of an end-user customer, a EUCL is indistinguishable from an increase to basic rates. The Maine access parity statute requires only the access rates paid by *carriers* to be at or below interstate levels. It says nothing about the level of any intrastate EUCL or about whether there should be one. However, we believe that an intrastate EUCL is not as appropriate as a USF for the same reasons that we believe that an increase to basic rates is not as appropriate as a USF.

[7] As discussed below, we have recently commenced a USF rulemaking for the independent telephone companies (ITCs). In that rulemaking we proposed that Verizon's local service rates for similar calling areas should serve as benchmarks for ITC rates and that ITCs should increase their rates to Verizon levels as a condition of receiving universal service funding. If we were to increase basic rates in this proceeding, the proposed benchmark for the ITCs would become a moving target.

local network, and because of the traditional universal service consideration that all carriers, and the customers of those carriers, benefit from having the largest number of customers possible connected to that network.

We will initiate a rulemaking shortly after we issue this Order that will propose to recover the $14.5 million access revenue loss through a state universal service fund (USF). We intend at this time to propose, as we did in the Rural USF rulemaking, that all telecommunications providers listed in the USF statute must contribute, based on those carriers' intrastate retail revenues.

Conducting a rulemaking will take about two months. We have considered using, as an interim USF, a modified version of the Carrier Market Share Charge (CMSC) that Verizon proposed in this proceeding. Verizon proposed that the CMSC would recover lost access revenue through an assessment on interexchange carriers (IXCs), based on each carrier's share of the total number of access minutes. AT&T and the Public Advocate argue that the CMSC proposed by Verizon would be unlawful, on the ground that the charge would be at a thinly disguised access charge or access charge surcharge, with the result that Verizon's access charges effectively would exceed the level required by section 7101-B.

We believe that any potential legal question could be addressed by a modification to the CMSC that would apply it to a broader base of carriers and revenues, and by implementing such charge for the express purpose of providing universal service funding. For example, the charge could be based on market share based on retail toll revenue (including Verizon's), so that it would not be effectively a surcharge on access charges, and would not apply only to carriers that purchase access. In the alternative, it could apply to all retail revenues of a specified group of carriers, as we have proposed in the Rural USF rulemaking.

Section 7104 authorizes the Commission to establish a USF. It does not specify any particular method or structure for the charge. It allows the Commission to impose the charge on a broad group of carriers, but does not require the Commission to impose it on all of the listed carriers. The fact that some of the burden of a CMSC, modified as proposed above, would fall on carriers that purchase access would not make it an illegal surcharge to access. It would instead apply to all retail toll providers. Given the nature of Verizon's proposal, and its proposed applicability, we would be reluctant, in an order issued in this proceeding to apply it, to all of the carriers listed in the USF statute, even on an interim basis. The proceedings in this case have provided notice only of the CMSC proposed by Verizon, and very substantial changes in the applicability of such a charge might not be appropriate.

On balance, we believe it is preferable to implement a rule that establishes a USF for Verizon as quickly as possible rather than implement an interim USF in the form of a CMSC. In the rulemaking we intend to propose that contributions will be retroactive to May 30, 2001, the date that Verizon must reduce its access charges.[8]

[8] In the Notice of Rulemaking, we will discuss issues concerning timing and cost recovery that may affect contributors as a result of any proposed retroactivity.

V. TOLL REVENUE LOSS

As discussed above, we have decided that Verizon should be able to recover, through universal service funding, the revenue loss for the known and immediate (May 30, 2001) reduction it must make in access charge rates. The access rate reductions are a direct and unavoidable consequence of the operation of the access parity statute, 35-A M.R.S.A. § 7101-B. By contrast, the access parity statute has only an indirect effect on retail toll rates and revenues, and other factors also have an influence. It is likely that Verizon will need to reduce retail toll *rates*, although access charge changes probably are not the only influence on intrastate toll rates. Verizon's retail toll *revenues* may also decline, although changes (positive or negative) in Verizon's retail toll market share could have as substantial an influence on its retail toll revenues as the access rate reductions. The ultimate level of Verizon's retail toll rate and revenue reductions will be the result of many factors, including the fact the Verizon has some control over their magnitude through pricing strategy, marketing and retention or increases in market share. The reductions also will not occur immediately, and their amounts are far from certain.

We find that Verizon should be able to absorb the toll revenue losses through productivity gains (even though, as discussed in Part III above, we do not implement a PRI or apply a productivity factor to any service) and through increases in revenues from other services.

Verizon has demonstrated under the present AFOR that it has been able to absorb rate reductions each year of approximately $7.5 million. Over the five-year span of the present AFOR, rates have been reduced by $38 million, or by 12.50%, as shown by the change in the price regulatory index (PRI) (the price cap) from 100 to 87.51 and the change in the actual price index (API) from 100 to 87.50.

Notwithstanding the *rate* reductions that Verizon absorbed during the present AFOR, Verizon's intrastate *revenues* during the five-year span have increased by about $45 million, i.e., from about $321 million to about $366 million. Under the revised AFOR, the revenues that fall within the present "core nondiscretionary" category are likely to fall because access and retail toll constitute such a large proportion of that category, and Verizon will not be able to increase most basic service rates. However, there is no reason to believe that revenues for services that presently are core discretionary and non-core will not continue to increase. In particular, because of strong customer demand, a substantial potential exists for increased revenues from high-speed data services.

We also observe that the nature of productivity gains is cumulative. If a utility achieves a gain in efficiency of $ X in one year and an additional $ X in the next, the total cost savings in the second year is $ 2X. By contrast, the loss of retail toll revenue that may result from a one-time decrease in access charges occurs once (although it may take more than one year for the full amount of the reduction to be realized). Thus, even though the projected (or finally realized) amount of toll revenue loss is larger than a single year's productivity gain, the cumulative nature of productivity gains is likely to overcome the one-time nature of a toll revenue loss reasonably quickly. We recognize that there may still be a timing difference between a substantial reduction in retail toll revenues, particularly if the toll revenue loss occurs very quickly, and Verizon's ability to absorb those losses through productivity gains and increases to other revenues. We also recognize that further access charge reductions may be required by the access parity statute in May of 2003 and that toll rates and revenues may decrease further as a result. However, it is likely that the 2003 decreases, if any, will be substantially less than those that are required on May 30 of this year.

Verizon has argued that both the access reductions and retail toll revenue reduction are "exogenous." We note first, that under the present AFOR, an "exogenous" change in costs or revenues is strictly defined and used as a factor in the price cap formula (the PRI). If an exogenous change occurs, it directly affects the allowed level of core rates. Under the revised AFOR, there is no formal recognition of "exogenous" changes in costs or revenues. Even applying the definition from the present AFOR, we do not agree that retail toll revenue changes are "exogenous." The definition requires that an exogenous change be outside the control of Verizon. Verizon clearly has considerable control over its retail toll revenues, and, even though access parity statute may also have an indirect influence over their ultimate level, it will not be possible to identify the extent of any particular influence.

For the revised AFOR we do not establish a formal pricing index or productivity factor. We also do not make a specific finding that productivity will occur at any particular level. However, we do find that Verizon should be able to absorb rate reductions of approximately the same magnitude as under the present AFOR, or perhaps more, because of continued productivity gains and increased revenues for services other than basic, toll and access.

We find that productivity gains are likely to continue at levels similar to those under the present AFOR. The evidence in this case does not persuade us that productivity is likely to be substantially higher or lower than we found (and incorporated in the PRI) in the present AFOR. Nevertheless, although problematic in significant ways, we find that the testimony of the Public Advocate's witness Kahn is somewhat more persuasive than that of Verizon witness Taylor. Accordingly, we believe that there is some possibility that productivity gains may be slightly greater than those incorporated in the PRI of the present AFOR. We review and discuss the testimony of both witnesses in Appendix A.

Verizon has provided estimates of possible retail toll revenue losses. The estimates have a broad range of $19 million to $51 million. The very size of the range indicates substantial uncertainty. Because we expect that continued productivity gains and revenue increases from other services can absorb much of this loss, because the total amount (and the portion of that amount that is attributable to the access parity statute) are so uncertain, and because of other reasons explained below, at this time the revised AFOR will not include any specific additional direct compensation to Verizon for retail toll revenue loss.

As noted above, it is likely that there is some link, albeit indirect, between wholesale access charges and rates in the competitive retail toll market. As access charges are reduced, retail toll rates offered by Verizon's competitors are also likely to decline. In a competitive market, prices tend to follow costs. When the costs for

Verizon's competitors fall (as they will when access charges are reduced), those competitors will be able to and probably will reduce their retail toll rates. As one of the competitors in the market, Verizon may need to reduce its rates to meet those of its competitors. Maine's experience following the first round (1999) of access reductions that occurred following the enactment of the access parity statute is that the retail toll rates of both Verizon's competitors and of Verizon itself did decline. Other competitive circumstances may also influence retail toll rates, however, including the fact that the intrastate toll markets in the various states are linked to the national interstate market through various interstate-intrastate optional calling plans offered by national IXCs.

If Verizon's competitors in the competitive retail toll market lower their rates, Verizon almost inevitably must lower its own. Nevertheless, Verizon must make strategic pricing decisions based on its informed perception of all competitive markets in which it operates. Particularly under an AFOR, it has every incentive to establish prices that will maximize profits. In the revised AFOR, we are granting Verizon total pricing flexibility for nearly all services, including retail toll, because we find (as argued by Verizon) that the markets for those services are competitive. Under an AFOR, Verizon should bear the risk of those pricing decisions, just as it will reap the benefits. It may succeed in optimizing profits or it may fail to do so because it misgauges competitive markets. Verizon should not be able to make up the difference between optimized revenues and unoptimized revenue levels through an increase to the limited number of rates that remain subject to regulation or through an increase to universal service funding.

It will be impossible, of course, to determine what portion of Verizon's ultimate retail toll revenues loss may be fairly attributed to any effect of the access parity statute, which is out of Verizon's control, and what portion is attributable to pricing decisions and marketing, which are within its control. Accordingly, it is difficult to justify a decision that Verizon should recover some specified portion of the toll revenue loss that may occur in the next few years.

In the case of market share shifts that may result in retail toll revenue loss (or gain) there is no link, even indirect, between the access rates (required by statute) that may affect competitive retail toll rates and Verizon's retail toll market share. Retail toll market share can, of course, have a significant effect on retail toll revenues. Migration of Verizon retail toll customers to other interexchange carriers results in net toll loss. (Verizon loses retail toll revenues, but gains access revenues paid by the customers' new carriers; access rates, however, are lower than the retail toll rates.) The success that Verizon may or may not have in retaining (or even regaining) retail customers will have a significant effect on its revenues. Through strategic pricing decisions and marketing, Verizon has considerable influence over its share of the retail market. Access costs may affect overall rates in the intrastate retail market, but once that influence has been established, each competitor's market share is established by its own pricing decisions (relative to other prices in the market), brand recognition and other marketing efforts.

Based on our discussion above, we find it is not appropriate to provide a safety net to Verizon for every dollar that it loses from retail toll. Verizon will continue to increase its productivity. It has considerable control over that productivity, regardless of any decision the Commission may make (or, in this case, does not make) about any particular predicted level of productivity. Even in competitive markets, Verizon also has some control over its prices, its level of sales, , and its retail market share. It also has considerable potential to increase revenues for high-speed services.

As mentioned above, the amount of ultimate retail toll revenue loss is quite speculative at this point; the timing is also in doubt. These considerable uncertainties reinforce our conclusion that we should not establish any method at this time for the recovery, through other rates, of any of Verizon's potential retail toll revenue loss. Nevertheless, because of these uncertainties, we must leave open the possibility that Verizon may be permitted to return during the revised AFOR and request modifications to the AFOR (including to universal service funding or to basic rates) if it turns out, despite all reasonable efforts on Verizon's part, that it is not able to absorb the actually realized toll revenue losses. We will not decide at this time the exact scope of the proceeding that we would conduct should Verizon make such a request, and we decide to address the matter. Such a proceeding could include consideration of the extent to which toll revenue loss may be attributed to the operation of the access parity statute and the extent to which it is attributable to events that are under Verizon's control (including its Verizon's revenue maximization efforts) and to other expected risks under an AFOR. If necessary, we would examine Verizon's revenue requirement and earnings, including the revenues and earnings of Verizon Advanced Data Inc.

One of the central characteristics of incentive regulation is that a utility bears the risk of high and low earnings due to a variety of causes, including competitive market forces. In the first AFOR Order, we rejected arguments that we should impose caps on over-earnings and under-earnings. If Verizon should request that we allow it to recover lost toll revenue through means other than productivity gains and revenue increases to services for which it has pricing flexibility, we may consider whether we should take into account the years (e.g., the first four years of the current AFOR) in which earnings were high. We do not believe that arguments concerning "retroactive ratemaking" necessarily apply when a utility seeks to alter the terms of an AFOR. Indeed, 35-A M.R.S.A. § 9102 states that an AFOR:

> need not conform with chapter 3 [35-A M.R.S.A. §§ 301-312] to the extent that the provisions of chapter 3 require the use of rate-base, rate-of-return or any other specific form of regulation of the rates of a telephone utility or to the extent that the provisions of chapter 3 give any party, including the telephone utility, the right to petition to change rates for telecommunications services.

We recognize that leaving open the possibility that Verizon may request some "relief " for toll revenue losses is arguably antithetical to an AFOR incentive plan. We believe, however, that we must recognize such a possibility in light of the uncertainties discussed above. Nevertheless, our finding and decision that Verizon should be able to absorb reductions in toll revenue provide a considerable incentive for Verizon to undertake every reasonable effort to absorb those losses. The approach we have chosen is far preferable to an alternative that attempts to create a recovery mechanism for those losses in advance and thereby reduces Verizon's incentives to mitigate the losses.

VI. OPERATOR SERVICES AND DIRECTORY ASSISTANCE

In the FNOI, we proposed to find that the markets for directory assistance (DA) and operator services were not sufficiently competitive to allow Verizon pricing flexibility for its provision of these services. Verizon has argued that those markets are competitive and that we should allow pricing flexibility. We decide that the services will remain subject to direct price regulation.

Operator services are those services that require the assistance of a live operator, or a mechanized equivalent, that obtains billing data from the caller when a call is not or cannot be billed to the line used for originating the call. The most familiar mechanized equivalent is the "bong tone" that signals to a caller to enter a calling card number. Other types of calls that require operator assistance include calls billed to a third party and collect calls.

Directory assistance provides phone numbers to callers who do not have access to printed or electronic directories, who are unable or unwilling to use an accessible directory, or who request numbers for new listings not included in any directory.

These services are offered by both local exchange carriers and interexchange carriers. Verizon provides both local and interexchange service, but the other predominant providers are interexchange carriers such as AT&T, MCI WorldCom and Sprint that have large shares of the interexchange market. Operator services are used almost exclusively in connection with long-distance (toll) calls. Directory assistance is provided in conjunction with both local and long-distance services toll calls. Most callers have access to local directories, but the telephone numbers of new customers who move into a local calling area will not be included until the directory is republished. Callers generally have less access to directories for locations outside the local calling area.

The providers of DA and operator services charge a fee for each use of the services. Those fees are in addition to any toll or other charge that applies to the call that the caller makes in conjunction with using the service.

Little evidence has been presented about this issue. Verizon's evidence and argument consists of conclusory statements that there are multiple providers of operator and directory assistance services, including the availability of some directory assistance information on the Internet. Verizon has not shown that there is price competition for these services. The Public Advocate provided no evidence or argument on these issues. Beyond the argument that a core nondiscretionary category (presumably including operator services and DA should still exist and be price-capped.

During the five and a half years of the current AFOR, Verizon's rates for directory assistance and operator services have remained frozen at the levels that existed immediately prior to the AFOR. In the Order establishing the first AFOR, we found, without extensive discussion, that these rates were "core nondiscretionary," meaning that we considered them to be "essential" rather than "nonessential" services and that they could not be increased unless the PRI (the overall price cap) was positive.[9] Nothing has changed during the course of the AFOR that makes these services any less essential. Although there are more DA providers than previously, there is some

[9] The PRI was negative in all five years of the AFOR.

concern that their listings are incomplete and inaccurate.[10] In this proceeding, Verizon has made no claim that either of the services is priced below cost. Indeed, the increasing mechanization of these services indicates that costs might be declining.

We take notice (through rates on file with the Commission) of the fact that virtually all of Verizon's "competitors" for operator and directory assistance services charge substantially more than Verizon. For example, Verizon's surcharge for using a calling card is 58 cents. Although some subscribers to long distance calling plans offered by AT&T, MCI WorldCom and Sprint may receive somewhat lower charges, calling card charges for other users are from $2.25 for MCI to $3.95 for Sprint. (AT&T charges $2.25 rate for callers who use a non-AT&T calling card, but $1.25 to callers who use a calling card issued by AT&T.)[11] In addition, those carriers appear to charge higher per-minute toll rates for operator-assisted calls than for 1+ calls.

For collect calls, the surcharges of AT&T, MCI WorldCom, and Sprint range from $2.25 to $3.95. Verizon's surcharge for a collect call is $1.30.

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[10] The FCC, in CC Docket No. 99-273 (January 27, 2001), has required ILECs to make their DA databases available to competitors (including both IXCs and Internet DA providers) at nondiscriminatory and reasonable rates because of concerns about the accuracy of competitors' databases and because ILECs derive their more accurate databases from their service processes. The FCC's purpose in ordering this access was to promote a competitive market for DA services. It found that competing providers have had difficulty offering a competitive product.

[11] However, if a caller accesses AT&T's network by means other than by 10+10+288 or 1-800-CALLATT and uses a card issued by a carrier other than AT&T, the surcharge is $4.95.

For directory assistance, the charges imposed by AT&T, MCI WorldCom, and Sprint for casual users range from $.80 to $.95. Verizon's charge is 40 cents for each request (after an allowance of three free requests per month).[12]

During the time period of the AFOR, all three of these competitive interexchange carriers have consistently raised their operator service and directory assistance rates.

Although there are other suppliers of these services, it appears that there is no *effective* price competition. As of 1999, its market share (based on revenues) of the Maine intrastate retail toll market was about 55%. As noted above, operator services are used primarily in conjunction with toll calling and DA is used in conjunction with both local and toll calling. Verizon provides the vast majority of local exchange service within its service territory and, given its large shares of both the toll and local exchange markets, one might expect that Verizon would be a price leader in associated markets, and that other providers would attempt to compete with Verizon's prices. In fact, as discussed above, other providers continue to have substantially higher charges than Verizon's and continue to increase those changes.

We take notice of certain facts concerning the operation of the telephone system, including the operation of intraLATA subscription. Telephone callers can access

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[12] The Commission required 10 free requests in *New England Telephone and Telegraph Company, Re: Proposed Increase in Rates,* F.C. #2213, Order (June 10, 1977). Prior to that case, New England Telephone had provided directory assistance without charge. The Company argued that a small number of customers made most of the directory assistance calls and that about half of DA calls were made for numbers that were published in the caller's local directory. The Company proposed a charge to deter excessive use of the system and to recover its costs from those who used the system. Commission required the Company upon request to provide free directories for any location within 30 miles of the customer's home exchange. Subsequent cases gradually reduced the free call allowance to three.

suppliers through "dial-around" (using a 101XXXX code, 950XXXX number, or an 800 number). Nevertheless, a caller who attempts to place a 0+ call (to use a calling card or to place another type of call requiring an operator service) will obtain the operator service from the company to which the telephone line (including a pay phone) is presubscribed.

In contrast to operator services, a customer who calls DA service will obtain the DA service provided by the customer's local exchange carrier. In Maine, that service will be provided by Verizon (whether the customer calls 411, 555-1212 or 1-207-555-1212), unless the customer has subscribed to a competitive local exchange carrier (CLEC) or "dials around" to reach a DA service provided by an interexchange carrier by dialing the carrier's 101XXXX code, 950XXXX, or 800 number, then Area Code + 555-1212. (In most cases, the caller must also dial a billing number, (e.g., calling card). A caller may obtain Verizon DA by dialing 411; for a line that is prescribed to another carrier, calling 411 is a form of dial-around.

We doubt that most consumers will "dial around" for alternative DA and operator services, even if they knew the prices of alternative providers. In fact, some carriers effectively discourage shopping around by callers that do not have a calling card issued by that carrier. As noted above, AT&T charges $2.25 for using a non-AT&T calling card while it charges $1.25 per charge for a customer that does use an AT&T card. It appears that the "market" for these services has some characteristics of service "tying."

Because of the extremely small penetration levels by CLECs, almost all persons who call DA service will obtain the service provided by Verizon unless they go through the cumbersome dial around process. At present, at least in part because of regulation of intrastate DA rates, Verizon DA users will obtain much more favorable rates than if they dial around. The fact that Verizon has a virtual monopoly on DA service (even if it presently acts as a benevolent monopolist) is nevertheless a strong reason for continued regulation.

We place little weight on Verizon's claim that the Internet offers alternative DA services. Not everybody is connected to the Internet. As noted above, the FCC has expressed concerns about the accuracy of DA information from IXC and Internet providers. Moreover, persons who are traveling constitute a substantial portion of users of DA services; those persons are far less likely to have access to the Internet than persons who are at their home or workplace, particularly when they are at a pay phone. It is doubtful that the internet offers any operator services because, at present, persons use the internet to obtain "free" long-distance calls, i.e., without per-minute charges.

We find that there has been distinct market failure for operator and directory assistance service, that there may be some *de facto* vertical integration with toll services, and that there is no effective competitive market. Due to those circumstances, we will not allow Verizon to establish prices without direct regulatory oversight. We do not rule that Verizon's prices for these services must be frozen, given that they have been in effect now for more than five and a half years. If Verizon proposes to change any of these prices, however, it will need to prove that its proposed price changes are cost-justified. We will also consider a request to allow greater pricing flexibility if Verizon can show that a truly competitive market has developed for either of these services. In the case of DA services, Verizon should also show that the market is competitive in quality (i.e., service is available that provides listings that are as reasonably complete and accurate as Verizon's).

VII. SERVICE QUALITY

A. Introduction

As noted in the FNOI, the Commission included a Service Quality Index (SQI) in the current AFOR with performance baselines and financial penalties, first to meet our service quality goals for telecommunications[13] and second, to provide Verizon-Maine (then NYNEX) with strong financial incentives not to cut its costs at the expense of service quality. Because we believe the SQI has proven to be an effective component of the current AFOR, we continue the mechanism but adopt modifications to the SQI in the revised AFOR.

B. Positions of the Parties

1. Verizon-Maine

Verizon-Maine takes the following positions on service quality:

a) A Service Quality Index (SQI) is unnecessary in a revised AFOR because:

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[13] "[E]nsure that telecommunications service quality, reliability, customer treatment, and credit, collection, and sales practices (including possibly anti-competitive activities), receive adequate regulatory consideration and protection; and maintain adequate quality of service standards and reporting requirements so that achievement of goals can be evaluated." Docket No. 94-123 Notice at 4.

i) Verizon-Maine's service quality was good before the AFOR, it has been good during the AFOR, and it would have been good without the AFOR's SQI.

ii) Competition has increased under the AFOR, is bound to continue increasing as time goes on, and because service quality is an important feature as customers choose among competitive service providers, maintaining good service quality is critical to Verizon's success in the competitive marketplace.

iii) As elements of the Bell Atlantic-GTE merger:

(a) Verizon reports monthly service quality data for each state to the FCC in accordance with the criteria in the NARUC "Service Quality White Paper." The reports are available from both the FCC and Verizon websites;

(b) Verizon-Maine has committed to the "Service Quality Assurance Plan," which includes better customer communication on installation appointments, better network monitoring and response to network congestion, an "ombudsman" position focused exclusively on Maine service issues, and quarterly meetings with the Commission and Staff to review service results.

b) In a competitive marketplace, the administrative and financial burden of imposing an SQI with a rebate mechanism *only* on Verizon-Maine would be inequitable. If the Commission determines service quality reporting is necessary in a revised AFOR, the reporting should be based on industry-wide baseline performance levels and be required of all carriers.

c) The current SQI has proven successful in preventing "the systematic and wide-spread deterioration of service quality" feared by the Commission under incentive regulation. Therefore, if the Commission determines an SQI is necessary in the revised AFOR, it should continue the current SQI unchanged.

2. The Office of the Public Advocate

The OPA takes the following positions on service quality:

a) A SQI is necessary in a revised AFOR because:

i) Although service quality is an important characteristic for choosing service providers in a competitive market, Verizon-Maine has virtually no competition in the residential local exchange market.

ii) Verizon-Maine is such a small portion of the revenues from Verizon's 13-state footprint, the resources necessary to assure good service quality could disappear without an SQI.

iii) Most competitors will not duplicate Verizon-Maine's network but will rely on Verizon-Maine's service quality to provide services to customers in Maine; thus, Verizon-Maine's service quality will be critical even if a customer takes local exchange service from a CLEC.

iv) If the revised AFOR is, like the current AFOR, a multi-year plan, there will be no regular rate cases to trigger service quality reviews and responses.

v) The data Verizon reports to the FCC pursuant to the NARUC Service Quality White Paper provides no performance baselines and therefore no basis for tracking comparative performance over time and no penalties or customer rebates for deterioration in performance.

vi) Only Verizon-Maine has the duties and obligations associated with its role as the incumbent provider of local exchange service for the vast majority of Maine's households and businesses; yet there are no specific service quality standards that are applicable to Verizon-Maine except for those that exist in the SQI.

b) On Verizon's position that the Commission should require service quality reporting not just by Verizon-Maine but by all LECs and CLECs, the OPA would not be opposed. Minimum service quality standards applicable to *all* carriers, however, would not necessarily reflect Verizon-Maine's historical performance and might instead allow a lower level of performance by Verizon-Maine, because of the tendency of generic rules to apply the "lowest common denominator" as the minimum performance standard. Such generic service quality reporting would be no substitute for a SQI with performance baselines that reflect Verizon-Maine's performance.

c) The current SQI should be changed in the following areas:

(i) the baseline performance levels and how performance measured, for some metrics;

(ii) added performance metrics and baseline levels; and (iii) the rebate structure, to account for the number of proposed metrics and Verizon-Maine's current revenues.[14]

C. Generic Topics Raised in the FNOI

1. General Description of Topics

The FNOI asked for comments on a number of generic topics discussed in the proposed SQI: more "granular" reporting, such as by wire center; separate reporting for residential and business customers; separate reporting for urban and rural areas; using "surveillance" levels; how performance baselines should be set; how any customer rebate mechanism should be structured; whether to include carrier-to-carrier wholesale service quality performance metrics. We discuss the parties' responses below.

2. SQI Reporting by Wire Center vs Service Territory-Wide

Both Verizon and the OPA expressed concerns about the burden, costs, complexity – and for Verizon also the necessity – of wire center-based reporting for the SQI. Verizon states that it lacks historical wire center data for many of the metrics in the SQI that was proposed in the FNOI, and that it would be an extremely cumbersome, time-consuming, expensive manual effort to report wire center-based data for metrics for which historical data are available.

3. Separate Reporting for Residential and Business Customers

The OPA supports separate reporting for residential and business customers, claiming that historical data would show Verizon-Maine performing at a higher level for business customers for most SQI metrics and that such gaps should be

[14] The OPA's proposed SQI is described below in Section VII. D.2.

closed over time so as to provide residential customers the same quality of service it provides business customers.

Verizon-Maine states it has historical data for each customer class (from which baseline performance levels could be calculated) for several SQI metrics, but it is generally opposed to expanding the SQI reporting beyond the levels in the current SQI. Verizon-Maine points out that its reports to the FCC pursuant to the NARUC White Paper's service quality criteria include separate reporting for residential and business customers, and that the Commission will be able to monitor Verizon-Maine's performance by customer class with those reports.

4. Separate Reporting for Urban and Rural Areas

Verizon-Maine's position on this topic is the same as its position on separate reporting for residential and business customers.

The OPA did not comment on this topic.

5. Service Quality "Surveillance" Levels

NARUC's Model Telecommunications Service Rules include the concept of "surveillance" levels, which appear to be about 20% less stringent than the SQI baseline performance levels. In the Model Telecommunications Service Rules, if a carrier fails to meet a performance metric's surveillance level for three consecutive months it must investigate, take corrective action, and report the results to the Commission. The FNOI asked whether some or all of a revised SQI's metrics should incorporate surveillance levels.

The OPA is opposed to using the surveillance levels' "two-tiered" approach; it argues that the lowest performance level would become the focus of attention and enforcement and, therefore, the only standard that has regulatory significance. Using a single standard – such as the SQI's baseline performance level – avoids confusion about the Commission's expectations and the public's understanding of what Verizon-Maine must achieve to avoid paying customer rebates.

Verizon-Maine is also opposed to an SQI that incorporates surveillance levels, because they would cause an additional, burdensome layer of administrative reporting and substitute lower thresholds for customer rebates than those set by the SQI's baseline performance levels.

Verizon-Maine stated it could support surveillance levels if the Commission changed the SQI's reporting structure to "exception reporting" (i.e., reporting only service results that are worse than the defined performance level), whereby the Commission could require reporting of any SQI metric for which the monthly results fell below its surveillance level for three consecutive months. Verizon-Maine suggests such an arrangement would reduce the administration burden of monthly service quality reporting for both itself and the Commission.

6. How SQI Baseline Performance Levels Should be Set

In the prior AFOR proceeding, we considered the issue of how to reflect the year-to-year variability in Verizon-Maine's (then NYNEX's) performance, as measured by the SQI's metrics, in setting performance baselines. Ultimately the Commission decided to account for that variability by setting the SQI's performance baselines at Verizon-Maine's worst annual performance in each of the three years prior to the AFOR order; i.e., 1992 through 1994.

For the SQI in the revised AFOR, Verizon-Maine supports the method the Commission used: it states that the baselines were set so as to assure that service levels under the AFOR would not deteriorate below the levels achieved under rate of return regulation, that any revised SQI should be based on that same rationale, and therefore for a revised SQI no changes should be made to the current SQI's performance baselines.

The OPA states that performance baselines should reflect Verizon-Maine's historical performance and be based on a review of the degree of variability in it and any trends in recent performance.

7. How a Customer Rebate Mechanism Should be Structured

Verizon-Maine states that in a competitive market, in which customers who are dissatisfied with any carrier's service quality will simply take their business elsewhere, the Commission must exercise caution when it imposes service quality standards and penalties on any single carrier. The market should be allowed to develop all conceivable service options if there is customer interest, without hindrance from Commission-imposed service reporting standards.

If the Commission concludes that service quality reporting and penalties continue to be required to maintain service quality, Verizon-Maine states it opposes any increases in penalties, or shifts in distribution of penalties among SQI metrics, or changes in how rebates to customers are distributed, because such changes would only add to its overall administrative compliance costs, which ultimately must be borne by its subscribers.

The OPA recommends no change in the basic structure of the existing customer rebate mechanism. It recommends increasing the maximum rebate amount at risk to reflect Verizon-Maine's current revenues, however, so as to provide the same incentive to Verizon's management not to cut costs at the expense of service quality in the revised AFOR as the current maximum rebate amount did in the current AFOR. Otherwise, the OPA argues, Verizon-Maine might conclude that the payment of penalty dollars is "worth" a certain amount of deterioration in service quality. The OPA recommends the maximum rebate amount be set at 4.5% of jurisdictional retail revenues, which is the same percentage the Commission applied in the current AFOR.

8. Service Quality to CLECs: "Carrier-to-Carrier" Service Quality Performance Metrics

Because the development of local exchange competition was an important aspect of the AFOR proposed in the FNOI, the Commission asked parties to comment on whether a revised SQI should incorporate metrics that measure the quality of Verizon-Maine's services to CLECs.

Verizon-Maine recommends against adding such metrics to a revised SQI and that the Commission develop them as part of its Section 271 proceeding.

The OPA made the same recommendation, and, in particular, recommends that the Commission use the same performance metrics the FCC imposed as a condition of its approval of the Bell Atlantic-GTE merger.

D. SQIs Recommended by the Parties

1. Verizon-Maine's SQI Recommendations

Verizon-Maine contends Maine's telecommunications market has become competitive, that competition will increase, and that because service quality is such an important factor in choosing a service provider in a competitive market that competition will discipline carriers' service quality. The Commission therefore should allow the market, rather than an SQI's metrics, determine which service characteristics customers care most about and carriers should therefore concentrate on. Thus, Verizon-Maine contends an SQI is unnecessary. Verizon-Maine further contends that in a competitive market any service quality reporting the Commission considers necessary should be imposed not just on Verizon-Maine but also on all its competitors.

If the Commission decides an SQI continues to be necessary to maintain its service quality, Verizon-Maine recommends that at most the Commission retain the current SQI, its performance baselines, customer rebate mechanism, and its maximum and per-metric rebate amounts, unchanged.

The current SQI has 12 performance metrics. (See Table 1).

TABLE 1
Current Verizon-Maine SQI

PERFORMANCE METRICS	BASELINES
<u>CUSTOMER SERVICE</u>	
Installation - % Appointments Not Met on Time – Co Reasons	1.65
Held Orders Average Total Delay Days	2051
Business Office calls % Answered over 20 seconds	31
SERVICE RELIABILITY	
Customer Trouble Reports Rate per 100 lines – Network	1.08
% Troubles not cleared within 24 hrs – Residence	21.1
% Troubles not cleared within 24 hrs – Business	9.0
Dial Tone Speed % over 3 seconds	0.36
Major Service Outage	977
<u>CUSTOMER SATISFACTION (% ALMOST MET/FAILED EXPECTATIONS)</u>	
TELSAM Residence Provisioning	7
TELSAM Small Business Provisioning	11
TELSAM Residence Maintenance	14
TELSAM Small Business Maintenance	15

2. OPA SQI Recommendations

The OPA proposes an SQI with 20 metrics grouped into the same three service categories in the current SQI. It would include 10 new metrics and 10 metrics from the current AFOR. Of the metrics from the current AFOR, eight would be unchanged, and the performance baseline of two would change. The OPA's proposed SQI also includes two additional metrics without performance baselines, which the Commission could consider adding at a later date once sufficient historical data is available to calculate performance baselines. (See Table 2.)

TABLE 2

SQI PROPOSED BY THE OPA FOR VERISON-MAINE

PERFORMANCE METRIC	BASELINE
(N) = new metric	(C) = changed baseline
CUSTOMER SERVICE	
(1) Installation Appts. Not Met (Co. reasons)-Res.	1.65%
Repair Appts. Not Met (Co. reasons)-Res.	Report Only*
(2) Installation Orders Held-Res. And Bus.	
(N) Missed Installation Rate	.67
(N) Average Delay Days Installation Held Orders	6.14
(3) Answer Time Performance	
(C) Business Office: % Ans. >20 sec.	25%
(N) Repair Center Calls: % Ans. > 20 sec.	25%
(N) Repair Center Busy Rate	3%
RELIABILITY OF SERVICE	
(4) Percent Troubles Not Cleared w/I 24 hrs.-Bus.	21.1%
(5) Percent Troubles Not Cleared w/I 24 hrs.-Res.	9.0%
(6) Customer Trouble Report Rate per 100 lines	1.08
(7) Network Congestion	
(C) Dial Tone Speed: % over 3 sec.	.1%
(N) Host/remote clusters > .36% delay	0
(N) Umbilical Blockage, units >.11% blocking	Report Only*
(8) Service Reliability	
(N) Service Outage (5,000 lines > 30 min)	0
(N) Interoffice Fiber Failure (30,000 lines > 30 min)	0
(N) SS7 Failure (>30 min.)	1
CUSTOMER SATISFACTION (% almost met/failed expectations)	
(9) Provisioning	
CCI Residence Provisioning	7
CCI Sm. Bus. Provisioning	11
(10) Maintenance	
CCI Residence Maintenance	14
CCI Sm. Bus. Maintenance	15
(11) (N) PUC Complaint Ratio	0.6

* The OPA recommends the Commission evaluate this data after two years and then decide whether to add these performance areas to the SQI with a performance baseline that reflects Verizon-Maine's performance. If these items are added, the OPA recommends appropriate changes be made to the penalty structure, including an increase in the total penalty dollars at risk.

3. New Metrics Proposed By OPA

a. Repair Appointments Not Met for Company Reasons

Verizon-Maine's repair performance is measured in the current SQI by the "Troubles Not Cleared within 24" hours metrics for business and residential customers. The OPA points out, however, that the percentage of repair appointments missed for Company reasons is much higher than for installation appointments missed, averaging 7 to 8 times higher over the last three years.

b. Held Orders

The OPA proposes to replace the "Held Order" metric in the current SQI with two new metrics: "Missed Installation Rate" and "Average Delay Days Installation Held Orders." The first is the percentage of installation appointments missed for Company reasons; the second is the number of "delay days" between the promised installation appointment date and the date of the completed installation, averaged over all customers with orders delayed for Company reasons. The OPA believes these metrics do a better job than the current SQI metric in measuring the delays customers actually experience in waiting for basic service to be installed.

c. Answer Time Performance[15]

Repair Center Calls: percent answered in greater than 20 seconds, and Repair Center Busy Rate.

[15] The OPA appears to recommend that this metric and the Held Order metrics be reported separately for residential and business customers (which if so would make a total of 25 metrics in its proposed SQI). In its comments on this report the OPA should clarify that point.

This area of performance is not measured in the current SQI. The OPA believes customers deserve the same call answering performance for reporting service troubles as they get calling Verizon-Maine's business office.

The OPA recommended a 25% call answering baseline, based on its assessment of Verizon-Maine's recent performance. Its recommended 3% Busy Rate baseline is based on a standard included in a stipulation that Verizon-Vermont joined in Vermont and OPA's assessment of the rate in place at the federal level for calls to cable TV operators.

d. Network Congestion

Host/remote cluster – dial tone speed: percent over 3 seconds; and Umbilical Blockage.

The OPA proposed the dial tone speed (DTS) metric be applied to each of Verizon-Maine's fourteen host/remote switch clusters. The OPA-recommended 0.36% baseline is the DTS baseline in the current SQI, which is the DTS averaged over all Verizon-Maine's central office switching machines.

The Umbilical Blockage metric measures the percentage of calls blocked when all trunks are in use that connect remote switches to their host switches. The current SQI does not measure call blocking, which, along with delayed (or no) dial tone, occurs when a telephone network is congested.

e. Service Reliability

Service Outage (5,000 lines > 30 minutes); SS7 network failure (>30 minutes); and interoffice fiber failure (30,000 lines > 30 minutes).

These outages are measured by the Service Outage metric in the current SQI, but the OPA believes it is inadequate, arguing that the present baseline is not a strict enough standard and thereby allows Verizon-Maine's reliability to deteriorate without penalty.

For these three new metrics, the OPA's recommended baselines (0; 0; and 1, respectively) and penalty amounts [$250,000; $250,000; v. $500,000 (> 30 minutes); $1,600,000 (> 60 minutes respectively)] are based on standards to which Verizon stipulated in Vermont.

f. PUC Complaint Ratio

This metric measures the number of complaints made by Verizon-Maine's customers to the Commission's Consumer Assistance Division. The ratio is the number of complaints filed per 1,000 utility company customers. These are complaints the customers have already discussed with Verizon-Maine, but where Verizon's response did not satisfy the customers.

The OPA bases the inclusion of this metric on a recent surge in disconnection-related complaints that were attributed to Verizon-New England when Verizon consolidated some Verizon-Maine-based customer service operations with operations in Massachusetts.

The OPA's recommended baseline (0.6) is based on its assessment of 1997-1999 complaint statistics.

4. Changed OPA Metrics

Dial tone delay: percent over 3 seconds and Business Office: percent of calls answered in over 20 seconds.

The OPA-recommended baselines (0.1% for dial tone delay and 25% for call answering performance) are based on its assessments of Verizon-Maine's recent performance.

5. Other OPA Service Quality Recommendations

a. Customer Rebate Dollar Amount

The OPA recommended the total dollars at risk in the SQI be raised to $16 million, from the current $11 million. This recommendation is based on Verizon-Maine's current revenues and the fact that Verizon-Maine is a much smaller part of a much bigger company.

b. Customer Notification of Service Quality

The OPA recommended the Commission continue the current AFOR's provision that requires Verizon-Maine to inform customers that a service quality penalty has occurred. The OPA also recommended that the revised AFOR include an annual service quality report to be sent by Verizon-Maine to its customers, so they will be informed of Verizon-Maine's performance in all service quality areas the Commission is monitoring.

c. Customer Rebates for Specific Failures

The OPA points out Verizon-Maine's tariffs provide for rebates to customers when local service and other services are interrupted beyond specific lengths of time, but that customers must apply to Verizon-Maine for the rebates and do so within ten days. The OPA recommends the Commission end the application requirement and order Verizon-Maine to make the rebates automatic and to periodically inform customers that such rebates exist.

d. Other OPA Recommendations

The OPA also recommends that the revised AFOR include rebates when Verizon-Maine fails to keep appointments or fails to install service on the date promised. The OPA recommends the rebate be a fixed amount or a waiver of certain charges. In addition to requiring Verizon-Maine to act like a company subject to competition, the OPA suggests such rebates will help ensure against localized service quality failures that would not show up in the SQI's service territory-wide averaging.

E. The Revised SQI

We will include a Service Quality Index in the revised AFOR for the same reasons we included the SQI in the current AFOR, and for additional reasons: (1) under the structure and pricing rules of the revised AFOR, only Verizon-Maine's rates for basic exchange service for residential and small business customers, directory assistance and operator services are capped; Verizon-Maine has pricing flexibility for all other retail services. The revised AFOR therefore represents a substantial reduction in the regulation of Verizon-Maine's operations compared to the current AFOR; (2) there is insufficient local exchange competition in Verizon-Maine's service territory – and virtually none for its residential and small business customers – for the Commission to rely on competition alone to cause Verizon-Maine to maintain and improve its service quality; (3) as the OPA has pointed out in this proceeding, most CLECs in Maine rely in whole or in part on the quality of Verizon-Maine's services and facilities to provide local exchange service to their customers; and (4) we believe Verizon-Maine, as a small fraction of its parent company, will need the financial penalty mechanism of an SQI to command the attention of Verizon management.

We reject as not credible Verizon-Maine's position that Maine's local exchange market is, or soon will be, competitive enough for customers dissatisfied with its service quality to simply take their business elsewhere. The testimony of OPA witness Norton and Sweet establish that CLECs provide virtually no competitive alternatives for residential and small business customers.[16]

As we noted in the FNOI, Verizon-Maine's service quality during the AFOR has generally been good. Verizon-Maine may well be correct that its service quality also would have been good without the SQI and its penalty mechanism. We agree with Verizon-Maine's position that in a competitive market for local exchange service competition should be sufficient to discipline the carriers' service quality, and we agree that in such a market all carriers, not just Verizon-Maine, should be required to comply with any service quality reporting the Commission decides is necessary. But Maine does not yet have a competitive local exchange market; Verizon-Maine dominates the market in its service territory. Thus, we agree with the OPA: For the foreseeable future, only Verizon-Maine has and will have the duties and obligations associated with being the only provider of local exchange service for the vast majority of Maine's homes and businesses, and there are no specific service quality standards that are applicable to Verizon-Maine – except those that exist in an SQI.

In the FNOI we asked the parties to consider a number of refinements and additions to the current SQI, including separate reporting for urban and rural regions and for residential and business customers, and especially reporting certain metrics by

[16] Verizon provides about 85% of the access lines in the State (most of the rest are provided by independent ILECs in their own separate service areas). Accordingly,

wire center, rather than the service territory-wide reporting that is averaged over all 140 Verizon-Maine wire centers. Averaging has a well-known "smoothing" effect, which can mask both extremely good and extremely bad service results; from the standpoint of the SQI's role in monitoring Verizon-Maine's service quality we are more concerned with bad service results going undetected. The current SQI, for example, did not detect the instances – i.e., the specific wire centers – in 1999 and possibly earlier, where customers suffered the effects of significant congestion in access line termination units and umbilical trunks. The current SQI does not have a call blocking metric. The Commission learned of the congestion from customer complaints to the Consumer Assistance Division, which prompted our investigation into Verizon-Maine's network management and monitoring practices in Docket No. 99-132.

The parties' comments on the SQI revisions suggested in the FNOI have been valuable. They have reminded us that the current SQI was designed to prevent systematic and widespread deterioration in Verizon-Maine's service quality under the AFOR and we believe the SQI has succeeded in doing so. We agree with Verizon-Maine that revisions to the SQI should not make it more complex, burdensome, and costly for Verizon-Maine to produce. With respect to the generic topics on which the FNOI requested the parties' comments, the revised SQI will not require separate urban-rural reporting, or separate residential-business customer reporting; it will not expand wire center-based reporting; it will not include "surveillance" performance levels or carrier-to-carrier (Verizon-Maine-to-CLEC) wholesale service quality performance

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Verizon must supply a far higher percentage of access lines within its own service territory.

metrics; and will retain the current SQI's method for setting baselines, its customer rebate mechanism, and its maximum and per-metric rebate amounts.[17]

We will study Verizon-Maine's service quality reporting to the FCC to see if its residential-business and urban-rural performance results are significantly different; if they are we will consider modifying the SQI. As for wire center-based reporting, we will require Verizon-Maine to continue the network congestion reporting we ordered in Docket No. 99-132. The terminating and originating call blocking reports may be reduced to an "exception report" format using the Company's actual internal standard call blocking thresholds for line units, umbilicals, and trunks.

1. The OPA's Recommended SQI

We will adopt the OPA's new "Held Order," "Repair Center Call Performance" and "Repair Appointments Not Met" metrics, which we also suggested in the FNOI. We will adopt the call blocking metric suggested in the FNOI, which will include the OPA's recommended "Umbilical Blockage" metric, but will also include the other sources of call blocking – line units, interoffice trunks, and switch module links.

We do not believe the OPA's Missed Installation Rate metric is necessary, as it overlaps the existing "Installation Appointments Not Met" metric.

We also do not believe it is necessary to add the OPA's recommended new Repair Busy Rate metric to the SQI, as there is no evidence that

[17] As the parties recommended, we will take up carrier-to-carrier metrics and a financial penalty mechanism in our 271 proceeding, Docket No. 2000-849.

customers have experienced a high busy signal rate when calling to report service troubles to Verizon-Maine's repair center.

The OPA's recommended "Dial Tone Speed" metric for Host-Remote clusters is not necessary. Delayed dial tone has nothing to do with the host-remote cluster's umbilical trunk connections; dial tone is delayed when customers' line units at their serving switches are congested when they attempt making calls. Thus, dial tone delay is an event that happens at a customer's local central office, not in the host-remote network.

We do not agree with the OPA's recommended new service reliability metrics for service outages and interoffice fiber and SS7 network failures. We especially do not agree with the magnitude of the financial penalties associated with those proposed metrics. The "Service Outage" metric in the current SQI, which is an adaptation of the comprehensive metric developed by the Network Reliability and Interoperability Council, covers all service outages and weights them according to the types of services that are lost, the number of access lines affected, and the duration of the outage. We agree with the OPA that the performance baseline for the "Service Outage" metric may need to be revised and will require Verizon-Maine to update it for the revised SQI.

We do not agree with the OPA's recommendation for increasing the maximum customer rebate amount in the revised SQI. As we have indicated above: we believe Verizon Maine's service quality under the AFOR generally has been good; and we agree with the Company's position that, because of its service performance under the AFOR, the revised SQI should not be more complex, burdensome, or costly. We believe the current SQI's $11 million maximum rebate amount, and its $1 million per-metric maximum rebates ($2 million for the service outage metric) are incentives enough for Verizon-Maine to continue to maintain its service quality under the revised AFOR.

2. Commission Adopted SQI

The Commission will adopt the SQI in Table 3. "TBD" (to be determined) means that Verizon will provide data to the Commission as required below.

TABLE 3
REVISED Verizon-Maine SQI

PERFORMANCE METRICS	BASELINES
N = new metric	C = Changed metric
CUSTOMER SERVICE	
(C) Installation - % Appointments Not Met on Time – Co Reasons	1.83*
(N) Repair - % Appointments Not Met on Time – Co. Reasons	TBD
(C) Held Orders Average Delay Days	TBD
Business Office calls % Answered over 20 seconds	23*
Repair Service Calls: % Answered over 20 seconds	TBD
SERVICE RELIABILITY	
Customer Trouble Reports Rate per 100 lines – Network	1.15*
(N) Repeat Trouble Reports	TBD
(C) % Troubles not cleared within 24 hrs	TBD
Dial Tone Speed % over 3 seconds	0.36
(N) % Blocked Calls	TBD
Service Outage	739*
CUSTOMER SATISFACTION	
(N) PUC Complaint Ratio	0.71*

* Verizon-Maine should verify that these values are correct. According to the Commission's records, they represent Verizon-Maine's worst annual performance over the last three years.

3. New Metrics in the Revised SQI

a. Repair Appointments; % Not Met on Time – Company Reasons

Verizon-Maine's performance in keeping repair appointments is just as important as its performance in keeping service installation appointments. This metric will apply only to repairs that require a premise visit.

b. Repair Service Calls: % Answered Within 20 Seconds

We believe this metric is as important to measure as Verizon-Maine's Business Office call answering performance. This metric will apply to calls answered by a live person, not an automated system.

c. % Repeat Trouble Reports

"Repeat troubles" are recurring service problems customers report within 30 days of their initial trouble reports. Although the Troubles Not Cleared within 24 hours metric measures Verizon-Maine's repair performance, it does not measure whether the repairs hold up; the % Repeat Trouble Reports metric does.

d. Blocked Calls

This is a much-needed network congestion metric, which will measure terminating and originating call blocking during switch busy hours in all sources of call blocking in Verizon-Maine's network: access line termination units, umbilical trunks, interoffice trunks and links between switch modules.

e. PUC Complaint Ratio

As indicated in the FNOI, this metric is included in the NARUC's Service Quality White Paper metrics, and the OPA has recommended that we include it in the revised SQI.

The current SQI lacks any metric that measures customer dissatisfaction with such services as billing, credit and collection, operator services, responses made to customers by Verizon-Maine's business office, repair centers, and customer care centers. The "Complaint Ratio" will measure Verizon-Maine's performance in dealing with these issues.

The OPA recommended that the Commission continue to measure and include customer satisfaction as measured by survey instruments in the SQI and require Verizon to have an independent survey expert review the Company's practices in designing and gathering data to ensure that it is statistically valid. The OPA also recommended that we measure the rate at which Verizon's customers file complaints against the company for issues related to local service. The OPA bases this recommendation on two events: the Commission's request to meet with the Company to discuss a recent surge in complaints; and the complaint filed by the Communications Workers of America (CWA) against Verizon's New York affiliate. The OPA goes on to state that it is concerned that the types of data manipulation that are alleged in New York could occur here in Maine. Based on these two reasons, the OPA states:

"measuring the PUC Complaint Ratio will provide a backstop for such possible misconduct and serve as another tool for measuring overall customer satisfaction."

We agree with the OPA that we need to continue measuring customer satisfaction as part of a new SQI and that the PUC complaint ratio is a good measure of overall customer satisfaction. We therefore eliminate the four surveys relating to provisioning and maintenance used in the current AFOR to measure customer satisfaction and replace them with the PUC complaint ratio.

The "PUC Complaint Ratio" will replace subjective measures (the surveys) with a more encompassing, objective measure. The surveys are the only metrics in the current AFOR that measure customer satisfaction with the Company's service. Yet these metrics examine only the Company's performance for provisioning and maintenance (for residential and business customers). Compounding this problem of limited performance parameters, only a small sample of the residential and business customers that utilized Verizon-Maine's provisioning and maintenance services are surveyed. The "PUC Complaint Ratio," on the other hand, will measure all the Company's services provided to all customers, from installations and repair to billing and collections. Consequently, the "PUC Complaint Ratio" will capture areas of customer dissatisfaction that the provisioning and maintenance surveys would not. In addition, while we do not necessarily believe that Verizon-Maine will experience the same problems as those alleged in New York by the CWA, the "PUC Complaint Ratio" nonetheless will address the OPA's concern of potential data manipulation by the company by providing an objective measure of service quality outside of the Company's control.

The "PUC Complaint Ratio" is a good indicator of the Company's overall service provided to customers. Customers who are not satisfied with the Company's service, whether it is repair service, installation service, or credit and collections service, may file a complaint against the Company. The number of complaints filed against the Company is, therefore, a reasonable indicator of overall customer satisfaction with the company. In addition, the complaint ratio is an indicator of the company's quality of service provided to customers who contact the Company seeking assistance. Complaints are taken by the Commission only after the Company has been afforded an opportunity to address the customer's issue directly with the customer. If Verizon fails to resolve the matter to the customer's satisfaction, the customer may then file a complaint against the Company with the Commission.

The Company argued that the Complaint Ratio is not a good indicator of service quality because many complaints are without merit. The Company provided no evidence that the percentage of meritless complaints is likely to vary depending on the level of total complaints. Accordingly, it is likely than an increase in the total number of complaints is a reasonable indicator of an increase in service problems.

The OPA also recommended that the SQI be more heavily weighted to actual experiences between customers and Verizon-Maine than can be measured with small sample customer surveys. We believe the "PUC Complaint Ratio" achieves this goal, because it is an objective measure that will not be influenced by a customer's mood at the time the survey is administered or in the way that a question may be posed during the survey.

Verizon argues that the inclusion of the "PUC Complaint Ratio" metric would amount to double jeopardy in that customers who are unhappy with Verizon's service would *likely* be included under another SQI measurement. While it is true that some customer complaints may be reflected in other metrics, many service quality areas for which customers have complaints would not, e.g., Verizon-Maine's quality of service provided to customers who contact the Company seeking assistance. In addition, the same argument could be made regarding the provisioning and maintenance surveys that the PUC Complaint Ratio would replace. The surveys measure customer dissatisfaction with provisioning (installation) and maintenance (repair). Yet, both installation and repair performance are also measured in the current SQI by the "Installation - % Appointments Not Met" and "% Troubles Not Cleared Within 24 Hrs" metrics.

The complaint ratio will be expressed as the number of complaints filed against the Company per 1,000 customers. The ratio will be calculated using the number of complaints that are filed against Verizon with the Commission in a calendar year. Complaints will be defined as customer contacts to the Consumer Assistance Division (CAD) where the customer has a dispute that he or she has been unable to resolve with the Company. This is the same definition that the CAD has used in the past. Customers who contact the CAD who have not previously contacted the Company are referred back to the Company. Both residential and business customer complaints will be included in the complaint ratio.

All complaints filed against Verizon will be included in the PUC Complaint Ratio. The OPA recommends that only complaints involving "local service" be included in the ratio calculation. We disagree, because no customers subscribe to Verizon-Maine's intraLATA toll service exclusive of its local service. This would make it extremely difficult (as well as subjective) to differentiate local service complaints from intrastate toll service complaints where customers have bundled services (local service and intrastate toll). In addition, historical complaint numbers used to calculate the recommended baseline include complaints involving Verizon's bundled service. To differentiate local service complaints from other complaints on an ongoing basis would not only involve a significant effort, but would also require a similar differentiation of historical data (necessary to establish the correct baseline for a local service only metric) that would be difficult, if not impossible, to accomplish.

The baseline for the "PUC Complaint Ratio" will be 0.71 complaints filed per thousand customers. This is the highest complaint ratio experienced by Verizon-Maine for the past three years and is consistent with our recommendation that baselines be established using Verizon-Maine's worst performance over the past three years.[18] The OPA recommended a baseline of 0.6, based on 1997 and 1999 complaint ratios. The OPA's examination reviewed 1997, 1998, and 1999 data. We believe that using the 2000 ratio is consistent with the rationale the OPA used in its recommendation of 0.6, the only difference being that the baseline is based on data from 1998 through 2000, rather than data from 1997 through 1999.

4. Changed Metrics in the Revised SQI

[18] The complaint rate for 1998 was .38; the complaint rate for 1999 was .64; and the complaint rate for 2000 was .71.

These are metrics that are slight modifications of metrics in the current SQI.

a. Installation - % Appointment Not Met on Time – Company Reasons

This metric will apply only to service installation that requires a premise visit.

b. Held Orders – Average Delay Days

This metric will measure the number of "delay days" between the customers' promised installation dates and the dates the installations are actually completed, averaged over all customers with orders delayed for Company reasons.

c. Troubles Not Cleared Within 24 Hours

This metric will measure the percentage of troubles not cleared for residential and business customers combined. We do not believe it necessary to have Verizon-Maine continue to report this metric, and only this metric, separately for each customer class. Verizon-Maine presently reports this metric by customer class to the FCC, and we will be able to monitor and detect any trends that indicate a significant gap in Verizon-Maine's class-specific performance.

5. The Customer Survey Metrics

The current SQI has four metrics that measure, through small sample monthly surveys by a Verizon vendor, residential and business customer dissatisfaction with Verizon-Maine's service provisioning and repair performance. We have eliminated these metrics because we have doubts that the survey sample size is adequate or that the survey process itself is sufficiently objective and consistently conducted from one interviewer to another.[19] For these reasons, we have not placed a great deal of weight on these sample survey-based metrics. We believe both the old and new metrics in the revised SQI cover customer dissatisfaction with Verizon-Maine's provisioning and repair performance more thoroughly and more objectively than the sample survey-based metrics. In particular, the Complaint Ratio measures Verizon-Maine's performance in these areas and all other areas. We note Verizon provides the FCC customer satisfaction survey data as a condition of its approval of the Bell Atlantic-GTE merger; thus, we will be able to monitor that data.

6. Performance Baselines

Verizon-Maine believes the purpose of a revised SQI and its performance baselines should be the same as it was for the current SQI: to provide assurance that Verizon-Maine's service levels under the AFOR would not deteriorate from the levels achieved prior to that time under rate of return regulation. Therefore, the performance baselines should not be changed from those in effect during the current AFOR.

[19] The survey is based on approximately 50 Verizon-Maine customers per month who have had service installed or repaired. Although that amounts to an annual sample size of 600, it is actually only 150 per metric, which we do not believe provides either an adequate level of statistical confidence or a small enough margin of error. During hearings the bench asked Verizon-Maine's service quality witness, Linda Thoms, to provide evidence that the month-to-month survey data are not correlated (which would allow the monthly data to be pooled and treated as a single sample). Ms. Thoms responded to the question in a data response. It provided no evidence, and instead seems to indicate there *is* month-to-month, serial correlation in the survey data, which means the monthly data should not be pooled.

The OPA believes the performance baselines should reflect Verizon-Maine's recent performance (which presumably means its performance under the AFOR), but the OPA did not provide a reason for its view.

We will update the revised SQI's performance baselines for the following reasons:

It has been nearly six years since Verizon-Maine operated under rate of return regulation; it is difficult for us to imagine this Commission, or a future Commission, returning Verizon-Maine to rate of return regulation.

The revised AFOR caps basic exchange, directory assistance, and operator assistance rates; otherwise it gives Verizon-Maine complete pricing freedom for all its other retail services. We believe that is enough of a change to the current regulatory mechanism for Verizon-Maine to justify resetting performance baselines in the revised SQI to provide assurance that Verizon-Maine's service levels under the revised AFOR do not deteriorate from those achieved under the current AFOR. Accordingly, in its compliance filing to this order, we will require Verizon-Maine to provide monthly service quality data for the new and changed metrics in the revised SQI for the years 97-98, 98-99, and 99-2000. The baselines for all metrics will be set at Verizon-Maine's worst annual performance levels for those three years.

We will not change the Dial Tone Speed metric's baseline of .36%. We agreed to increase the original 0.04% baseline in annual steps to the current level because of the Internet's impact on Verizon-Maine network, and to prevent Verizon-Maine from making line unit investments just to maintain the 0.04%

performance level so as to avoid paying penalties. The current 0.36% baseline is still one of the lowest DTS baselines in the country.

We will update the Service Outage metric's baseline based on its most recent 3-year performance. Because of the massive Verizon-Maine outages in Freeport and Topsham in 1995 and 1996, we added this metric to the SQI in the 97-98 SQI reporting year primarily as an incentive to Verizon-Maine to create more physical route diversity in its interoffice network, which it has accomplished with the construction of its service territory-wide "self-healing" SONET rings. We believe the performance baseline for the Service Outage metric should reflect the effects of Verizon-Maine's high-performance interoffice network.

7. Reporting

We will require Verizon-Maine to file SQI reports monthly.

8. Other OPA Service Quality Recommendations

a. The OPA recommends the Commission order Verizon-Maine to send its customers an annual service quality report. We will not order Verizon-Maine to do so. We will require Verizon-Maine to continue placing on any customer bills containing service quality rebates the notation: "REBATE FOR BELOW-STANDARD SERVICE QUALITY" next to the rebate amount. As under the current AFOR, if the annual penalty exceeds $750,000, Verizon shall provide to customers in equal credits in 12 monthly bills.

b. The OPA recommends that the Commission order Verizon-Maine to compensate customers when it misses repair appointments or service installation dates for Company reasons by providing affected customers with a fixed amount or a waiver of charges. We will not require Verizon-Maine to implement such a procedure, because Verizon-Maine will be subject to paying customer rebates in the revised SQI's for two Installation and Repair Appointment Not Met metrics.

c. The OPA recommends the Commission order Verizon-Maine to make automatic the customer rebates in its tariffs when local service and other services are interrupted beyond specific lengths of time. Verizon-Maine's tariffs require customers to apply for such rebates within ten days of the service outage. We will require Verizon-Maine to revise their tariffs to make these rebates automatic. It is unlikely that very many customers would be aware of the existence the tariff provisions, the rebates or the requirement to request them within 10 days of the outages. In its compliance filing to this order Verizon-Maine should make this change to its tariffs.

VIII. VERIZON INVESTMENT LEVELS IN MAINE

The Executive Branch (EB) agencies have proposed that the Commission establish a benchmark that compares technology deployment in Maine's service center communities with that deployed in the Route 128 region of Massachusetts or throughout the nation. The EB also supports a moderate increase to basic rates to encourage continued investment by the Company in Maine.

The OPA argues that the Commission should reject the EB proposals because: 1) economic theory suggests that new investments should be made on the basis of the expected return on the particular investment, not the overall expected return in the jurisdiction; and 2) the Commission should not put itself in a position of encouraging investment that might ultimately turn out to be unprofitable, and lead to Verizon seeking additional rate increases as compensation. Further, the OPA asserts that the Company's actual or implied threats to invest less in Maine, unless it receives favorable treatment on its request for higher basic service rates, are both "hollow and inappropriate." The OPA goes on to state that giving credence to such threats will encourage them in the future . The OPA argues that such encouragement would permit Verizon to initiate a type of bidding war among jurisdictions, with each one seeking to get Verizon to invest by offering the highest return. Finally, the OPA states that while it shares the EB's hope that investment in telecommunications infrastructure in Maine will be vibrant and competition will develop, the OPA believes that the EB has proposed the wrong means and the wrong investor to achieve that worthwhile goal. The OPA asserts that the policy objective in Maine should be to allow the competitive marketplace to decide what services are offered and by whom.

The Commission has the responsibility to enforce all provisions of the statutes governing telecommunications in Maine, and encouraging the deployment of advanced services is established as a policy goal in both § 7101(2) and § 9103 (4). Nevertheless, the Commission must balance that objective against other objectives in the statutes that may appear to have competing purposes, such as the promotion of universal service, the provision of service throughout the state at reasonably comparable rates and maintaining local rates at as low a cost as possible. The Commission has also expressed its desire to encourage the development of economic competition throughout the state. Thus, while we share the intent stated by both the EB and the OPA that telecommunications infrastructure and the services offered in Maine should be as good or better than those offered in other jurisdictions, we do not believe that Verizon should be given any special incentives to invest in the State beyond those that it receives from our implementation of incentive regulation in general. Our policy remains that competition should determine the level of investment and the investors in the telecommunications market, and that competition should be fair and open (a "level playing field"), as provided for in various sections of state and federal law. The current and revised AFORs both give Verizon full pricing flexibility on new or advanced services, to the extent permitted under applicable laws or FCC rulings, and the opportunity to realize fully the rewards that sound investments will bring. Only in the areas of basic service for residential and small business customers, operator services and directory assistance will we constrain Verizon's ability to raise its prices, and we do so because we find that workable competition does not exist at this time in the markets for those services.

Despite our view that, in general, competition should control the type and amount of investment in the telecommunications industry in Maine, Verizon, as an ILEC, has certain obligations to maintain a level of service that is acceptable to the Commission throughout its service territory. Generally, the maintenance-of-service obligations apply only to those services considered essential or basic, but the individual services included in that category may change over time. There also may be circumstances in which the Commission or other State agencies may wish to take steps to encourage the placement of a particular type of infrastructure or the offering of new or advanced services that would not otherwise be made or offered under a purely economic decision. Those steps should be taken only after an examination of all alternatives and ramifications. If necessary in the future, we may undertake further investigation and analysis of this issue.

We do share some of the concerns raised by the OPA, such as how a particular investor or provider should be selected if the Commission determines that intervention into the market were desirable and/or necessary, and who bears the risk if a Commission – encouraged investment or service turns out not to be financially viable.

APPENDIX A

DISCUSSION AND ANALYSIS OF PRODUCTIVY FACTOR TESTIMONY

We find Verizon's witness Dr. Taylor's proposed productivity factor of 2.0 % is understated for many of the same reasons that we did not adopt the productivity factor (also 2%) that he proposed in the proceeding (Docket No. 94-123) that established the present AFOR. Dr. Taylor's analysis is almost identical to that which he provided in the initial AFOR case.[20] In the Order in that case, we criticized his use of only national (not Company or state-specific) and outdated data. In this case, he has continued to present only national data and it has been only minimally updated.[21]

As in his analysis provided 5 years ago, Dr. Taylor relies on a national index as the basis for his recommendation. In the first AFOR Order we found that national productivity data is not necessarily relevant to Maine. Dr. Taylor ignores the fact that Verizon Maine's costs, and most likely, the changes in productivity that it experiences in Maine, are not typical of the national costs and productivity trends. Verizon Maine's costs are among the highest for "non-rural carriers." Maine is one of only six states that receive increased federal high cost assistance for its "non-rural" carrier (Verizon)

[20] In addition to his analysis presented in 94-123, he proposes that further support for a finding of 2% productivity may be found in the fact that the average productivity factor found by state commissions that incorporated such findings in incentive rate plans is 2.66%.

[21] Dr. Taylor has included a more recent study by Spavins and Lande that includes updated data up to September 2000. As discussed below, the use of this more recent data actually casts some doubt on Dr. Taylor's "indirect method" results. For his "direct" or total factor productivity (TFP) method, Dr. Taylor used a study that has been updated to 1995, but the study is still heavily weighted toward very old data.

because of its high costs. Maine is an outlier both in cost structure and with respect to the nature of the market served and therefore national data does not provide much guidance for us. Dr. Taylor also fails to fully recognize productivity gains due to the two recent mergers (with Bell Atlantic and with GTE). Those gains will not be fully reflected in national telecommunications productivity data and results.[22]

Dr. Taylor uses pre-divestiture TFP data (extending back to 1947) to justify his productivity recommendation. Since divestiture, the United States telecommunications industry has undergone some of the greatest technological, market, structural and operational changes in its history. Since the enactment of the 1996 TelAct and widespread use of the Internet, those changes have accelerated. The use of studies that substantially pre-date those events is likely to create results that are not representative of today's telecommunications environment.

Dr. Taylor does not recognize any change in input prices that differs from changes in the economy as a whole. His justification for omitting input price changes rests primarily on a criticism of the data that Dr. Kahn uses to establish an input price differential (a criticism that we discuss below), but he provides little other support for the proposition that such a differential does not exist. Dr. Taylor presented an "indirect" (long-term price trends) analysis, which attempts to measure productivity "as the difference between national inflation and the output price growth rate of the telecommunications industry or firm. This "indirect" method does not and should not

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[22] National productivity studies will recognize some of the productivity gains due to mergers to the extent merging companies are included in the national data. However, since national data includes some companies that did not merge, national studies are likely to understate any productivity gains the productivity gains that occur for merged companies.

include a price input differential. Dr. Taylor also provided a "direct" or total factor productivity (TFP) analysis, which ordinarily would include an input price differential, but in this case did not. His rebuttal testimony could be read to suggest that no price input price differential exists because of the similarity of the direct result (which omits an input price differential) to the indirect result (which should not include an input price differential). However, we place little weight on the indirect result for the reason that telephone industry price changes are not likely to be a very strong indicator of true productivity changes when they are so heavily influenced by price-cap regulation that results in prices that reflect pre-established productivity changes.[23] The fact that Dr. Taylor has used more recent data in his indirect analysis means that it includes more price-cap-influenced "productivity."

We also cannot fully accept Dr. Kahn's proposed productivity factor of 6 % or 6.5 % (depending on whether a "stretch" factor is included). Dr. Kahn relies primarily on a study conducted by the Federal Communications Commission staff for use in the FCC's interstate price cap regulation for incumbent LECs. Although used for interstate ratemaking, the FCC staff study covers the total operations of the firms, not just their interstate operations.

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[23] For example, assume that the rate of inflation was three percent in recent years and that the X factor was 4.50%. During these years, the average rate change would be –1.50% (3% - 4.50%). That would be the observed rate of price change, but it was calculated without any reference to the actual rate of productivity change. The rate of price changes (supposedly indicative of productivity) would be the same regardless if the actual rate of productivity change was one or six percent. This example highlights that once price caps control prices, the indirect method proposed by Dr. Taylor should not be used to estimate the realized rate of productivity change.

Verizon raised a number of concerns with the productivity studies provided by the Public Advocate's witness Marvin Kahn. Dr. Kahn addressed some of Verizon's concerns by making modifications to the methodology used by the FCC staff. One criticism though, the method used to measure the level of output, remained in dispute at the close of the proceeding. A total factor productivity study measures the relationship between the total output and the total inputs of a firm. A multi-product firm, such as a telephone company, produces a large number of outputs. It is therefore necessary to construct an aggregate measure of outputs. It is not an easy matter to create a single output index that reflects the wide diversity of products sold by a telephone company.

One of the products sold by Verizon, and other local exchange carriers, is local service. Local service is typically sold on a flat-rate basis. A customer that subscribes to local service obtains access to the public switched network and unlimited use of the local network. The FCC study and, therefore, Dr. Kahn, used the number of minutes of local telephone calls as its measurement for all services, including local service.

Verizon correctly points out that in Maine, as in many other areas of the country, local service is sold for a flat rate. Consequently when usage per line increases, as it has in recent years, the revenue of the company remains unchanged. Verizon contends that whereas its revenues are independent of the number of local minutes of use, the number of access lines, rather than the minutes of use, should be used to measure the output of local service. Verizon effectively argues that minutes of use are not an output of a telephone company's local service.

Verizon's criticism highlights a fundamental problem with total factor productivity studies. The studies are designed to measure the relationship between inputs and outputs, but implementation of this seemingly simple concept is difficult. Assume for example, that Verizon is right that the correct measurement for local service is access lines, rather than minutes of use. Whereas the amount of switching and transport capacity that must be installed on its switched network is clearly a function of the minutes of use, an adjusted study, as advocated by Verizon, would include the cost of the inputs to satisfy the demand for traffic capacity, but not any output measurement that reflects traffic volume. The output measurement proposed by Verizon for local service, the number of switched access lines, does not reflect that an increase in minutes of use by consumers is a major cost driver on the public switched network.

We addressed this issue in a different context in the first AFOR Order. We determined that there might be certain non-core services that were "relatively unproductive." Such services may have included ISDN and video dial tone, for which the inputs required to provide the services resulted in few if any outputs. We effectively recognized that a TFP study must address the aggregate of inputs and outputs, even though subsets of products may exhibit either higher or lower productivity.

Accordingly, the fundamental problem with total factor productivity studies is that they attempt to reduce the complex operations of the telephone company to two indices that measure the all of the disparate set of inputs and outputs of the telephone company. A number of explicit and implicit assumptions about the weighting of different inputs and outputs must be made before the final indices are established. After these assumptions are made, the Commission must determine if the indices are inherently biased upward or downward for the task to which they will be used.

Dr. Taylor also criticized the data that Dr. Kahn used to establish an input price differential of 1.4% on the ground that it is "statistically insignificant." As the Public Advocate points out, however, Dr. Taylor's criticism was based on a statistical analysis of input prices from a much earlier time period than the one Dr. Kahn actually used. While negation of Dr. Taylor's criticism does not positively establish the statistical validity of the data actually used by Dr. Kahn, nevertheless, there is nothing in the record that casts doubt on its validity.

Finally, Dr. Taylor's testimony and Verizon's brief argue that little reliance should be placed on Dr. Kahn's analysis because it in turn is based on the FCC study that, although once adopted by the FCC, was reversed by the Court of Appeals, was heavily criticized by parties following the remand, and was not thereafter re-adopted by the FCC. The Public Advocate satisfactorily argues that this procedural history does not cast doubt on the validity of much of the FCC staff study, and, to the extent that it does, Dr. Kahn has provided corrections for questionable aspects of the FCC study.

The Court of Appeals remanded the case in which the FCC established the 6.5% productivity factor. The Court did not criticize the study because of the use of the input price differential or the use of local minutes of use as a measurement of local service output. The court questioned the FCC's use of a stretch factor and its decision to give less weight to certain years of the data. It did not challenge any of the methodology used to construct the numbers (rather they questioned the post-study adjustments made by the Commission). In response to certain criticisms that the United States Telephone Association (USTA) made during litigation following the remand, Dr. Kahn made modifications to the FCC staff study. Verizon is correct that, after the remand, the

FCC never adopted the study (or any other proposed productivity index), but it did not do so because of any perceived problem with the study. Rather, it abandoned any regulation that included a productivity factor when it adopted the proposal for access reform presented by the Coalition for Affordable Local and Long-Distance Service (CALLS), which included Verizon.

It is our belief that despite the input and output measurement problems identified herein the direct (TFP) method OPA study presented by Dr. Kahn represents the better of the two studies because it relies on more current data and more geographically relevant data to reach its conclusions. Furthermore, we believe the OPA analysis correctly employs an input price adjustment, which is not included in Dr. Taylor's direct analysis. The fact that the OPA's analysis has incorporated most of the suggested modifications that USTA made in its criticism of the FCC model enhances the credibility of that approach.[24]

[24]To the extent that productivity studies are necessary in the future, parties' productivity studies should use Maine specific inputs, outputs, and technology productivity studies for the technology mix in place in Maine.